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ABSTRACT

This volume of work papers from the Summer Institute of Linguistics includes the following: "Goals and Indirect Objects in Seri" (Stephen A. Marlett); "Seri Kinship Terminology" (Mary B. Moser and Stephen A. Marlett); "Quiegolani Zapotec Phonology" (Sue Regnier); "Role and Reference Grammar" (Robert D. Van Valin, Jr.); "The Binding Properties of Quechua Suffixes" (David Weber); and "Obligatory Dative Clitic Doubling in Spanish" (Karol J. Franklin). (JL)

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PREFACE

As is usual for the workpapers volumes from SIL-UND, the contributors of these papers represent a variety of connections with the Summer Institute of Linguistics at the University of North Dakota. Steve Marlett, Becky Moser, Sue Regnier, and David Weber are regularly on the staff of SIL-UND and were on staff this summer. Robert Van Valin, of the Linguistics Department at SUNY-Buffalo, was visiting lecturer for a week at this year's SIL-UND session. Karol Franklin is a former student whose contribution to this volume grew from her M.A. work at the University of Texas at Austin; in addition to that historic tie with SIL-UND, her paper is particularly appropriate for this collection because it builds on and responds to a paper in an earlier volume (J. Albert Bickford, "Initial and Non-Initial Indirect Object in Spanish," in the 1982 workpapers).

The topics similarly represent a variety of kinds of linguistics: in phonology, Sue Regnier's description of Quiegolani Zapotec; in syntax, Steve Marlett's paper within a relational grammar framework, David Weber's paper within government and binding theory, Karol Franklin's paper which responds to both of these syntactic theories, and Robert Van Valin's overview of a relatively new theory of syntax (Role and Reference Grammar); and Steve Marlett's and Becky Moser's paper on Seri kinship terms.

Our thanks for the production of the volume go to Betty Brown for copyediting, to Ed Owen for doing editing and formatting on the computer, and to Chuck Speck and Kathie Dooley for arranging for printing and distribution. We would also like to express our appreciation to unnamed referees for help in evaluating papers for the volume.

R.A.D.

J.M.

GOALS AND INDIRECT OBJECTS IN SERI[1]

Stephen A. Marlett
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1 Introduction

A significant group of Seri verbs display a sensitivity to whether a Goal is singular or plural.[2] (I use the term 'Goal' as a cover term for 'Recipients', 'Addressees', etc.) A verb such as {æti} 'give', for example, has the subcategorization frame [1 3/Sg]; that is, it accepts only a subject and an indirect object, and the indirect object must be singular.[3] With such verbs, if the Goal is plural, it *must* appear as a relational noun phrase (an Oblique).

The data which appear in this paper are of typological interest. I argue that Seri has Indirect Objects, but there is not a one-to-one mapping between the semantic role Goal and either the syntactic relation of Indirect Object or any oblique relation. Unlike in Southern Tiwa, where there is optionality in the mapping according to Rosen's 1990 analysis, the mapping in Seri is mediated by subcategorization frames which are sensitive to number.

This paper also presents data and arguments which are of theoretical interest. First, I argue that there are verbs which govern both 3-2 Advancement and 2-3 Retreat, establishing more firmly the existence of the latter in human language.[4] One argument

[1]I appreciate the discussions of these facts that I have had with David Perlmutter, Carol Rosen, and Chuck Speck.

[2]Some of the facts presented here are discussed in Marlett 1981, but the analyses differ in several points.

[3]I use the standard Relational Grammar notation, 1 (Subject), 2 (Direct Object), 3 (Indirect Object).

for this analysis over a monostratal analysis is based on the fact that, with certain verbs, the presence (or absence) of an *initial* Indirect Object is registered on the verb. A second argument against a monostratal analysis is based on the fact that one loses the ability to posit a simple subcategorization frame for certain verbs.

Second, I propose that a degree of simplification of the Seri grammar may be achieved by adopting a Minimality Principle. This principle correctly predicts that certain revaluations should not be expected in Seri. It also permits simplification of the lexical entries of verbs.

This paper is organized as follows: in section 2 I show a set of facts which are the basis for distinguishing between Obliques, Indirect Objects, and Direct Objects. In section 3, the Minimality Principle is introduced and its predictions explained. In section 4 I discuss verbs which show the need for other key proposals: (a) differential treatment of singular and plural Goals with respect to initial grammatical relations, (b) lexically-governed 3-2 Advancement, (c) lexically-governed 2-3 Retreat, and (d) morphology which is sensitive to initial 3hood. In section 5 I discuss alternative analyses of the verbs in question, including one in which there is simply a more complex skewing in the mapping of semantic roles to grammatical relations.

2 Direct objects, indirect objects, and obliques

It is important to be able to distinguish between Direct Objects, Indirect Objects, and Obliques in Seri. Each of these grammatical relations (or classes of grammatical relations, in the case of Obliques) has different properties. These properties are discussed below.

2.1 Agreement properties

Seri has three way person agreement on the verb: Subject, Direct Object, and Indirect Object agreement. The underlying forms of the agreement morphemes are given in Table 1. Number is not distinguished for Indirect Object Agreement.

Final Subjects determine Subject agreement, final Direct Objects determine Direct Object agreement, and final Indirect Objects determine Indirect Object agreement.[5] Verb stems also reflect the number of the final Subject by changes in the root and/or suffixation (see Marlett 1990).

In nonpassive clauses, Goals determine Direct Object agreement in some clauses and Indirect Object agreement in others. In (1) the Goal is a final 2 and determines Direct Object agreement. In (2) the Goal is a final 3 and determines Indirect Object agreement.[6] (These clauses are also discussed more below.)

The abbreviation 'F2' represents 'final direct object'.

[4]See the discussion in Perlmutter 1990.

[5]Direct Object chomeurs also determine Direct Object agreement. See the discussion of Seri impersonal passives in Marlett 1984.

I assume that those Obliques which determine Indirect Object Agreement are final Indirect Objects. This analysis is discussed in Marlett 1990 (p. 533), but in that article the terminology 'Oblique Agreement' was used nevertheless.

[6]The first line of the example is close to a phonemic transcription; the second line is essentially the

Table 1: Agreement morphemes

	Subject	Direct Object	Indirect Object
1s	?-, ?p-	?im- (?po- in imperatives)	?æ-
1p	?a-	?iši-	?æ-
2s	m-	ma-	mæ-
2p	ma-	maši-	mæ-
3	(unmarked)	(unmarked, but see sec. 2.3)	ko-

(1) ?intmíiit
?im-t-miiit
1sDO-R1-ask
'did s/he ask me?'

(2) ?æ?áamX
?æ-?-aa-amX
1IO-Im-Dat-say
'say it to me!'

2.2 Transitive allomorphy

Various morphemes display suppletive allomorphy which is sensitive in whole or in part to the presence of a final Direct Object in the clause. These facts therefore provide a positive test for the Direct Object relation. For example, there are two suppletive allomorphs of the first person singular Subject prefix: {?} occurs if the clause is finally transitive, {?p} if it is finally intransitive. Another example of such allomorphy is found with the infinitive prefix: if the clause is finally intransitive, the prefix is {ika}; if the clause is finally transitive, the prefix is {i?a}.

(3) i?pyomáɸp
?p-yo-m-aɸp
1sSI-Dt-N-arrive
'I didn't arrive'

(4) i?yomá?o
?-yo-m-a?o
1sST-Dt-N-see
'I didn't see him/her/it'

underlying form. (Complete analyses of verb and noun stems are not presented due to complications discussed in Marlett 1990.) A couple of verbs use a capital C in their underlying form. This represents the empty consonant position discussed in Marlett and Stemberger 1981.

(5) ikáɸp
ika-aɸp
InfI-arrive
'to arrive'

(6) i?á?o
i?a-a?o
InfT-see
'to see (it)'

2.3 Object marker

When a clause has a third person final Subject and a third person final Direct Object, the prefix {i} occurs on a finite verb.[7] The verb form for 's/he saw it/her/him' is iyóo?o ({i-yo-a?o} 'OM-Dt-see'). In (7) the Goal is a final 2; the Object Marker occurs.

(7) ktám kix táitom kmáam kop itmíiit
ktam kix t-aitom kmaam kop i-t-miiit
man the Rl-speak woman the OM-Rl-ask
'the man spoke, he asked the woman...'

2.4 Passivization

Only Direct Objects can be passivized in Seri. If a nominal can be a passive Subject, it can also be a Direct Object in an active clause. In (8), a Goal has been passivized. This is possible since it can also surface as a Direct Object in Seri, as in (9).

(8) šiXkám ki? ?ptpǽæ
šiXkám k? ?p-t-p<A>-æCæ
fish the 1sSI-Rl-Pv-give
'was I given fish?'

(9) šiXkám ki? ?imíyæ
šiXkám k? ?im-mi-æCæ
fish the 1sSI-Px-give
's/he gave me fish'

2.5 Relational nouns

Final Obliques surface as possessors of relational nouns. I restrict discussion here to the Oblique relations which I call Oblique_{IN} and Oblique_{ON}. A Locative Oblique_{IN} occurs as possessor of the relational noun {áno} 'in, to, from', as shown in (10).

[7]This prefix also occurs on Subject nominalized forms under slightly different conditions. It occurs on finite verbs under certain other conditions which are not relevant here. See the discussion in Marlett 1984. It should not be confused with epenthetic vowels which occur to prevent a syllable onset cluster from beginning with a sonorant.

(10) ?áXš kop ?amáæn ak áno kápi?a
?a-aXš kop ?amáæn ak ano k-ap=?a
Ab-pet the interior the 3P/in SN-stand-Dec
'the dog is inside the house'

A Locative Oblique$_{ON}$ occurs as possessor of the relational noun {ati} 'on', as shown in (11).

(11) iti nskámom ?a?a
i-ati m-si-m-oom<SR> ?a=?a
3P-on 2sS-Ir-N-lie Aux-Dec
'you shouldn't lie down on it'

3 The Minimality Principle

In a theory in which nominals may revalue from one grammatical relation to another, numerous possibilities exist. Various of these are ruled out by the Oblique Law, namely Oblique to Oblique, 3 to Oblique, 2 to Oblique, and 1 to Oblique (Perlmutter and Postal 1983). Other possibilities remain, however, of which some are attested in Seri, but some are not.

(12)

Oblique to 3	Attested
Oblique to 2	Not Attested
3 to 2	Attested
3 to 1	Not Attested
2 to 3	Attested
2 to 1	Attested
1 to 2	Not Attested
1 to 3	Not Attested

As Gerdts 1992 points out, such facts require explanation. I propose that much of the asymmetry shown above for Seri can be explained by the following principle:

(13) Minimality Principle: Unless otherwise stipulated, revaluations are minimal.

This principle would correctly allow for all of the attested revaluations and all of the unattested revaluations in Seri shown above, with the exception of 1 to 2 (Antipassive). The nonexistence of the latter, if true, must be stipulated.

In languages where Obliques advance to 2, the revaluation of Oblique to 2 is still in keeping with the Minimality Principle if one assumes the Landing Site Principle (Gerdts 1992), of which Part A interests us here:

(14) Landing Site Principle (part A): Only morphosyntactically-licensed argument positions can be revaluation landing sites.

In some ways, the Minimality Principle is like the Universal Sonority Scale in phonology. It is not inviolable cross-linguistically, but the grammar of a language is less marked and more highly valued if it is consistent with the principle.

The grammar of Seri will also include other information. Passive, Unaccusative

Advancement, and Oblique to 3 Advancement are not lexically governed. But 2-3 Retreat and 3-2 Advancement are governed by particular predicates. Once this is known, the lexical entries for the verbs in question may simply specify [+Retreat] or [+Advance].

4 The proposals

In this section I motivate various simple proposals for the understanding of Seri grammar, and show how they interact to yield the superficially complicated situation that we find.

4.1 Subcategorization for singular 3s

I posit that several verbs in Seri subcategorize for an optional or obligatory *singular* 3. That is, they accept a 3 in their 'relational valence',[8] but only if it is singular.[9] If something like a plural Goal is to be expressed, it must be an Oblique and appear as a relational noun.[10] The following pairs of examples illustrate this fact (certain final grammatical relations of the Seri are indicated in the free translation):

(15) tóotxʷk pak ʔækámxk
tootxʷk pak ʔæ-k-amxk
cholla some 1IO-Im-deliver
'bring some cholla cactus (F2) to me (F3)!'

(16) tóm k? ʔíno kámxk
tom k? ʔi-ano k-amxk
money the 1P-in Im-deliver
'bring the money (F2) to us (FObl)!'

(17) mæʔpyáæti
mæ-ʔp-yo-æti
2IO-1sSI-Dt-give
'I gave to you (F3)'

(18) komkáak takoi áno ʔpyáæti
komkáak takoi ano ʔp-yo-æti
people those 3P/in 1sSI-Dt-give
'I gave to those people (FObl)'

---

[8]This terminology is from Rosen 1981.

[9]I purposefully avoid examples with causativized verbs. A clause union analysis would lead one to expect the Subject of the inner verb to very possibly appear as an Indirect Object (Davies and Rosen 1988). This is what regularly happens with such verbs, as shown by the following example, where the verb glossed 'show' is a causative form of 'see'.

(i) mikanóaa kom ʔæʔakóoʔotim
mi-kanóaa kom ʔæ-ʔ-akóoʔotim
2P-boat the 1IO-Im-show/M
'show us (F3) your boat (F2)!'

But such verbs are therefore less interesting than simple verbs.

[10]Rosen 1990 makes a similar claim for Southern Tiwa. She claims that certain recipients may be realized as either Obliques or as Indirect Objects. This proposal requires a weakening of any claim of direct relation between semantic role and initial grammatical relation.

(19) ko?yáamX
ko-?-yo-aa-amX
3IO-1sST-Dt-Dat-say
'I said it to him/her (F3)'

(20) míno ?yóomX
mi-ano ?-yo-amX
2P-in 1sST-say
'I said it to you (pl.) (FObl)'

(21) kíno kámX
ki-ano k-amX
3P-in Im-say
'say it to them (FObl)!'

The subcategorization frame for two verbs of this group would be:

(22) {amxk} 'deliver' [1 2 (3/Sg)]

(23) {æti} 'give' [1 3/Sg]

These verbs contrast with a verb such as {kašit} 'take away forcefully', which allows for singular or plural Goals as Indirect Objects.

(24) tom k? ?æiyokášit
tom k? ?æ-i-yo-kašit
money the 1IO-OM-Dt-take.forcefully
's/he took the money away from me (F3)'

(25) tom k? ?æiyokášitim
tom k? ?æ-i-yo-kašitim
money the 1IO-OM-Dt-take.forcefully/M
's/he took the money away from us (F3)'

(26) {kašit} 'take away forcefully' [1 2 3]

One verb commonly appears with Goals, and yet does not subcategorize for a 3 at all. It is therefore relationally a monotransitive verb. Singular and plural Goals both appear as relational nouns.

(27) símæt ki? míti itáom
simæt k? mi-ati i-t-aom
bread the 2P-on OM-Rl-beg
's/he was begging for bread (F2) from you (FObl) ...'

(28) šíiX kXátɬk k? ?ín itáom
šíiX k-Xatɬk k? ?i-ano i-t-aom
thing thin the 1P-in OM-Rl-beg
's/he was begging for a tortilla (F2) from us (FObl) ...'

The subcategorization frame for this verb would be:

(29) {aom} 'beg' [1 2]

4.2 3-2 Advancement

A number of clauses have Goals as final Direct Objects. In such clauses, the Goal determines Direct Object agreement, and the clauses are finally transitive by all available tests. The proposal I make is the standard one within Relational Grammar analyses: these verbs require 3-2 Advancement.

The following verbs have simple subcategorization frames, yet require 3-2 Advancement.[11]

(30) {ai} 'tell' [1 3] [+Advance]

(31) {ææ<SR>} 'give' [1 2 3] [+Advance] (2 is specific)

(32) {æCæ} 'give' [1 2 3] [+Advance] (2 is generic)

(33) {aipot} 'pay' [1 (2) (3)] [+Advance]

The 3 in clauses with these verbs always advances to 2. It determines the presence of the Object Marker (if Subject and Direct Object are third person) in the following examples.

(34) óX imíi
oX i-mi-ai
thus OM-Px-tell
'thus s/he told him/her/them (F2)'

(35) óX iyóaam
oX i-yo-aaam
thus OM-Dt-tell/Pl
'thus they told him/her/them (F2)'

It also determines Direct Object agreement in sentences such as those which follow.

(36) óX ?išimíi
oX ?iši-mi-ai
thus 1pDO-Px-tell
'thus s/he told us (F2)'

(37) tóm ki? ma?ítæ
tom k? ma-?-t-ææ<SR>
money the 2sDO-1sST-Rl-give
'did I give you (F2) the money ?'

(38) šiXkám ki? matææ
šiXkám k? ma-t-æCæ
fish the 2sDO-Rl-give
'did s/he give you (F2) fish?'

[11]The initial 2 (Theme) is a 2-chomeur in the final stratum. Some of these verbs enter into arguments for the analysis of passive clauses in Seri in Marlett 1984, which also provides additional evidence

(39) mašitkmáipotim
maši-t-m-aipotim
2pDO-Rl-N-pay/M
'didn't s/he pay you (pl.) (it)?'

As a 2, the initial 3 may also passivize and be the final Subject, and as such be an Equi victim.

(40) tóm ki? ?pyopǽ?æ
tom k? ?p-yo-p<A>-ææ<SR>
money the lsSI-Dt-Pv-give
'I was given the money'

(41) šiXkám k? ikapǽ?æ ?míimšo
šiXkám k? ika-p<A>-ææ<SR> ?-mi-amšo
fish the InfI-Pv-give lsST-Px-want
'I want to be given the fish'

(42) šiXkám k? ikapǽæ ?míimšo
šiXkám k? ika-p<A>-æCæ ?-mi-amšo
fish the InfI-Pv-give lsST-Px-want
'I want to be given fish'

4.3 2-3 Retreat

Some clauses have Themes as final Indirect Objects. In such clauses, the Theme determines Indirect Object agreement, and the clauses are finally intransitive if there is no other nominal as Direct Object. I claim that the verbs in question require 2-3 Retreat. The subcategorization frames for these verbs are:[12]

(43) {aasot} 'lend' [1 2 (3/Sg)] [+Advance] [+Retreat]

(44) {ita‡?áa} 'sell' [1 2 (3/Sg)] [+Advance] [+Retreat]

These verbs may both occur without a Goal as 3, either because the Goal/3 is optional, or because any Goal/3 must be singular. In the following examples, note that

---

for the 3-2 Advancement analysis.

[12]The root {ita‡?áa} may mean either 'buy' or 'sell', depending on the frame in which it occurs. Our interest here lies with the use as 'sell'. The following examples with the frame for 'buy' show that it is a typical transitive verb (no Source allowed).

(ii) šiXkám ki? kátXo pak isita‡?áa ?aya
šiXkám k? k-atXo pak i-si-ita‡?áa ?a=ya
fish the SN-be.much some OM-Ir-buy/sell Aux-Int
'will s/he buy a lot of fish (F2)?'

(iii) ?ásax kap i?ata‡?áa ?míimšo
?asax kap i?a<A>-ita‡?áa ?-mi-amšo
basket the InfT-buy/sell lsST-Px-want
'I want to buy the basket (F2)'

(iv) tróoki ?ata‡?áa ki?
trooki ?a-aa?-ita‡?áa k?
car SN-Pv-buy/sell the
'the car (F1) that was bought'

the Theme is determining Indirect Object agreement, that there is no Object Marker on the verb, and that the intransitive allomorph of the first person Subject agreement appears.

(45)
```
kmáaX ánim  i?yáa     šo ko?pskmáasot        ?a?i
kmaaX ænim  ?i-Ø-yaa  šo ko-?p-si-m-aasot    ?a=?i
now   knife 1P-OM-own a  3IO-1sSI-Ir-N-lend  Aux-Dec
'now I won't lend my knife (F3)'
```

(46)
```
ánim  šo ?íno   kʷyáasotim
ænim  šo ?i-ano ko-yo-aasotim
knife a  1P-in  3IO-Dt-lend/M
's/he lent a knife (F3) to us (FObl)'
```

(47)
```
kʷtmitaɬ?áa?o
ko-t-m-itaɬ?áa=?o
3IO-Rl-N-buy/sell-Dec
's/he didn't sell it (F3)'
```

(48)
```
šiXkám ?ípkom  ko?ptkmitaɬ?áa?o
šiXkám ?ipkom  ko-?p-t-m-itaɬ?áa=?o
fish   this    3IO-1sSI-Rl-N-buy/sell-Dec
'I didn't sell this fish (F3)'
```

The *intransitive* allomorph of the infinitive prefix is required in the following sentences.

(49)
```
?ásax  kap kʷikitaɬ?áa       ?míimšo
?asax  kap ko-ika-itaɬ?áa    ?-mi-amšo
basket the 3IO-InfI-buy/sell 1sST-Px-want
'I want to sell the basket (F3)'
```

(50)
```
míno    kʷikitaɬ?áa       ?míimšo
mi-ano  ko-ika-itaɬ?áa    ?-mi-amšo
2P-in   3IO-InfI-buy/sell 1sST-Px-want
'I want to sell it (F3) to you (pl.) (FObl)'
```

A clause containing these verbs without an initial 3 cannot be passive; instead, as with intransitive verbs, the Unspecified Subject prefix occurs on the verb if the initial Subject is unspecified.

(51)
```
ánm   ?áakšox ki? kookx  k?  ?íno  komkáasot
ænm   ?aakšox ki? k-ookx k?  ?i-no ko-mi-ka-aasot
metal bows    the SN-two the 1P-in 3IO-Px-US-lend
'one (unspecified) lent two rifles (F3) to us (FObl)'
```

The fact that the Theme is a final 3 is clear. I claim that the initial 2 retreats to 3. However, when there is an initial 3 present, that 3 is a final 2 in active clauses, by 3-2 Advancement, contrary to the Chomeur Law.[13]

[13]An analysis with simultaneous 2-3 Retreat and 3-2 Advancement was posited by Perlmutter and Postal (1983) for Kinyarwanda, although Gerdts and Whaley 1991 propose another analysis of the Kinyarwanda facts which avoids the problematic co-occurrence.

(52) P 1 2 3 (initial stratum)
P 1 3 2 (final stratum)

This analysis is not immediately obvious, however. If Direct and Indirect Object Agreement are both called for, as in these cases, a kind of (independently attested) Object Camouflage occurs, as discussed in Marlett 1990 (p. 526).[14] Specifically, only one object prefix occurs, and it has the *form* of Indirect Object Agreement but the *person* required by the Direct Object. This Camouflage appears in some examples which follow.

In the example immediately below, the Imperative allomorph which appears here is possible only if the clause is finally *transitive*.[15] The Goal is a final 2.

(53) ʔæʔáasot
ʔæ-ʔ-aasot
3IO/1sDO-Im-lend
'lend me (F2) it (F3)!'

The transitive allomorph of the first person Subject prefix and of the infinitive prefix occur in examples with Goals as final 2s.

(54) koʔyitaɬʔáa
ko-ʔ-yo-itaɬʔáa
3IO-1sST-Dt-buy/sell
'I sold it (F3) to him/her (F2)'

(55) tíiX mæiʔataɬʔáa imáaʔa
tiiX mæ-iʔa<A>-itaɬʔáa i-i-m-aCa=ʔa
that.one 3IO/2O-InfT-buy/sell SN-OM-N-know-Dec
's/he can't sell it (F3) to you (sg.) (F2)'

A 'sell'/'lend' clause with an initial 3 may be passive.[16]

---

[14]For example, compare the following examples. In the first one, the Direct Object determines Direct Object Agreement. In the second one, an Instrumental occurs as Indirect Object (the only way it can occur) and Object Camouflage occurs.

(v) maʔsníp ʔaʔa
ma-ʔ-si-níp ʔa=ʔa
2sDO-1sST-Ir-hit Aux-Decl
'I will hit you (with a closed fist)'

(vi) ʔáʔæ tíkom mæʔsníp ʔaʔa
ʔæʔæ tikom mæ-ʔ-si-nip ʔa=ʔa
stick that 3IO/2sDO-1sST-Ir-hit Aux-Decl
'I will hit you (F2) with that stick (F3)'

[15]See Marlett 1981 for a discussion of imperative prefix allomorphy.

[16]An impersonal passive is required here. Impersonal passives occur if there is a plural 2 or if there is a 3 in the clause with which the verb must agree, and the other conditions for passive are met. Additional details are given in Marlett 1984 (where some nominals that I now call final 3s are referred to as Obliques).

(56)
```
ænm    ?aakni šo mætompáasot
ænm    ?aakni šo mæ-t-m-p<A>-áasot
metal bow     a  3IO/2DO-R1-N-Pv-lend
'you (sg.) weren't lent a rifle (F3)'
```

The verb {šaXʷ} 'discuss' is slightly different from the verbs discussed above. First, it allows for singular and plural initial 3s. In the following examples, the Goal is a final 2 or 1.

(57)
```
ma?nšáXʷ
ma-?-mi-šaXʷ
2sDO-1sST-Px-discuss
'I am discussing with you (sg.) (F2)'
```

(58)
```
mai?ašáXʷ          i?Xóomšo
ma-i?a<A>-šaXʷ     ?-Xo-amšo
2sDO-InfT-discuss 1sST-Em-want
'I want to discuss with you (sg.) (F2)!'
```

(59)
```
maši?nšáXʷ
maši-?-mi-šaXʷ
2pDO-1sST-Px-discuss
'I am discussing with you (pl.) (F2)'
```

(60)
```
iyošáXʷ
i-yo-šaXʷ
OM-Dt-discuss
's/he discussed with him/her (F2)'
```

(61)
```
i?pya?šáXʷ
?p-yo-aa?-šaXʷ
1sSI-Dt-Pv-discuss
'I (F1) was discussed with'
```

Second, when there is no Goal, the Theme is a final 2.

(62)
```
?æ   kmáaX mos  ikáitom       i?máa šo
?æ   kmáaX mos  i-Ø-ka-aitom  i?máa šo
1Pro now   also 3P-AN-US-talk other a

?æ  ššáXʷ      ka?a
?æ  si-šáXʷ    ka=?a
1Pro Ir-discuss Aux-Dec
```

'I will now discuss another topic (F2)'

Third, when both a Goal and a Theme occur, the Goal advances to 2 but the Theme retreats to 3. The combination results in Object Camouflage.

(63)
```
šíiX  šo  mæ?nšáXʷ
šiiX  šo  mæ-?-mi-šaXʷ
thing a   3IO/2DO-1sST-Px-discuss
'I am discussing something (F3) with you (sg./pl.) (F2)'
```

(64) šíiX šo kʷiyošáXʷ
šiiX šo ko-i-yo-šaXʷ
thing a 3IO-OM-Dt-discuss
's/he discussed something (F3) with him/her/them (F2)'

(65) táaX mæ?nšáXʷ
taaX mæ-?-mi-šaXʷ
that 3IO/2DO-1sST-Px-discuss
'I am discussing that (F3) with you (sg./pl.) (F2)'

Such examples are opaque; one might propose that they do not have any syntactic rearrangement of the Objects. But we suspect from the simpler examples that the Goal may be a 2 hidden by Object Camouflage. Clearer evidence of the syntactic rearrangement is possible by passivizing the Goal and making it an Equi victim. The following example shows that the Theme is indeed a final 3 since it determines Indirect Object Agreement and the (complement) clause is finally intransitive.

(66) táaX kʷika?šáXʷ i?míimšo
taaX ko-ika-aa?-šaXʷ ?-mi-amšo
that 3IO-InfI-Pv-discuss 1sST-Px-want
'I want that to be discussed with me'
(More literally, I want to be discussed that (F3)')

Therefore the lexical entry for {šaXʷ} 'discuss' must include a condition on 2-3 Retreat. 2-3 Retreat occurs with this verb if and only if the initial 3 (Goal) advances to 2.[17]

(67) {šaXʷ} 'discuss' [1 (2) (3)] [+Advance], conditional [+Retreat]

4.4 Indirect object registration morphology

Three verbs are sensitive to the presence of an initial 3. The presence or absence of an initial 3 is indicated morphologically by adding the 'Dative' prefix.[18] The point of this section is that such a generalization is possible under the analyses proposed. The notion 'initial 3' cannot be replaced by any one superficial or non-initial grammatical relation, nor by any one semantic role. The nominals in question are not always final 3s, or final 2s; and some Goals are not 3s, but rather Obliques.

The lexical entries for the two verbs that are sensitive to the positive presence of

[17]An alternative analysis for this verb would be to claim that the final 3 is not really a Theme or an initial 2, but an initial Oblique that advances to 3. The Goal (initial 3) always advances to 2, and the Oblique (topic discussed) always advances to 3, but in addition advances to 2 if and only if there is no Goal that is a 2.

[18]The Dative prefix is an ablauting process (<A>) with the verb 'hide' and the 'augment' prefix {aa} with the verb 'say'. The augment prefix is most commonly used as a causative prefix in Seri.

an initial 3 are:[19]

(68) {isX^{w}} 'hide' [1 (2) (3)] [+Advance if no 2]
Morphology: Dative prefix <A> if initial 3

(69) {amX} 'say' [1 2 (3/Sg)]
Morphology: Dative prefix {aa} if initial 3

First, consider examples of these verbs in clauses without an initial 3, either because there is no Goal or the Goal is plural (and hence an Oblique). Note that the verbs appear with simple stems.

(70) mos kámXo
mos k-amX-o
again Im-say-AdvS
'say it (F2) again!'

(71) itámX
i-t-amX
OM-Rl-say
'did s/he say it (F2) ?'

(72) i?yóomX
?-yo-amX
1sST-Dt-say
'I said it (F2)'

(73) kíno kámX
ki-ano k-amX
3P-in Im-say
'say it (F2) to them (FObl)!'

(74) míno ?yóomX
mi-ano ?-yo-amX
2P-in 1sST-Dt-say
'I said it (F2) to you (pl.) (FObl)'

(75) ?ísX^{w}
?-isX^{w}
Im-hide
'hide it (F2)!'

[19]Alternatively, one could view the so-called Dative prefix as a derivational affix that derives ditransitive verbs from monotransitive verbs. Under such an analysis, each verb root has two lexical entries:

(vii) {isX^{w}} 'hide' [1 (2)]
(viii) {<A>-isX^{w}} 'hide from' [1 (2) 3] [+Advance if no 2]
(ix) {amX} 'say' [1 2]
(x) {aa-amX} 'say to' [1 2 3/Sg]

(76)
```
?æ    ?sísXʷ        ?aya
?æ    ?-si-isXʷ     ?a=ya
1Pro  1sST-Ir-hide  Aux-Int
'shall I hide it (F2)?'
```

In the following examples, an initial 3 occurs. Its presence is reflected not only by Indirect Object Agreement, but also by the Dative prefix.

(77)
```
ko?yáamX
ko-?-yo-aa-amX
3IO-1sST-Dt-Dat-say
'I said it (F2) to him/her (F3)'
```

(78)
```
šíiX  šo  mæspáamX
šiiX  šo  mæ-si-p<A>-aa-amX
thing a   2IO-Ir-Pv-Dat-say
'something will be said to you (F3)'
```

(79)
```
?æ?ésXʷ
?æ-?-<A>-isXʷ
1IO-Im-Dat-hide
'hide it (F2) from me/us (F3)!'
```

(80)
```
ikáaspox        ki?   mæskmésXʷ              ?a?a
i-Ø-ka-aaspox   k?    mæ-i-si-m-<A>-isXʷ     ?a=?
3P-AN-US-draw   the   2IO-OM-Ir-N-Dat-hide   Aux-Dec
's/he will not hide the pencil (F2) from you (sg./pl.) (F3)'
```

(81)
```
ikáaspox        ki?  ?æpésXʷ                 i?míimšo
i-Ø-ka-aaspox   k?   ?æ-i-Ø-p-<A>-isXʷ       ?-mi-amšo
3P-AN-US-draw   the  1IO-3P-AN-Pv-Dat-hide   1sST-Px-want
'I want the pencil to be hidden from me'
(More literally, 'I want that the pencil (F1) be hidden from me (F3)')
```

The verb {isXʷ} 'hide' may also omit the Theme if the verb is understood reflexively (in which case the word {?akX} 'somewhere' is also used with it).[20] If there is no Theme, the Goal (initial 3) advances to 2. In the examples that follow, the Goal is clearly a 2. The clauses are all finally transitive by the known tests.

(82)
```
?ákX       ?ésXʷ
?akX       ?-<A>-isXʷ
somewhere  Im-Dat-hide
'hide (yourself) from him/her (F2)!'
```

(83)
```
?ákX       i?ésXʷ            intámšo
?akX       i?a<A>-<A>-isXʷ   m-t-amšo
somewhere  InfT-Dat-hide     2sS-Rl-want
'do you want to hide (yourself) from him/her (F2)?'
```

[20]Reflexive clauses in Seri typically are transitive clauses with a reflexive noun phrase such as ?ísox 'myself' or mísox 'yourself.'

(84) ?ákX i?pésX^{w}
?akX ?po-Ø-<A>-isX^{w}
somewhere 1sDO-Im-Dat-hide
'hide (yourself) from me!'

With the verb {miiit} 'ask (about)', the prefix {aa} behaves somewhat differently. This verb takes the prefix {aa} only if there is *no* initial 3.[21]

(85) {miiit} 'ask (about)' [1 (2) (3/Sg)][22] [+Advance] [+Retreat]
Morphology: Antidative prefix {aa} if no initial 3

First, consider examples in which an initial 3 is *not* present. The Theme (what is asked about) is a final 3, by 2-3 Retreat. Since there is no initial 3, the Antidative prefix occurs. If there is no initial 3, there is no final 2 and the clause is superficially intransitive.

(86) ?ætamíiit
?æ-t-aa-miiit
1IO-Rl-ADat-ask
'did s/he ask about me (F3)?'

(87) k^{w}tamíiit
ko-t-aa-miiit
3IO-Rl-ADat-ask
'did s/he ask about him/her/it (F3)?'

(88) šíiX šo míno k^{w}tamíiit
šiiX šo mi-ano ko-t-aa-miiit
thing a 2P-in 3IO-Rl-ADat-ask
'did s/he ask about something (F3) of you (pl.) (FObl)?',
i.e., 'did s/he ask you (pl.) something?'

(89) šíiX š áno k^{w}tamíiit
šiiX šo ano ko-t-aa-miiit
thing a 3P/in 3IO-Rl-ADat-ask
'did s/he ask about something (F3) of them (FObl)?',
i.e. 'did s/he ask them something?'

In the following examples, an initial 3 is present, and hence the Antidative prefix does *not* occur. The initial 3 advances to 2 and determines Direct Object agreement or the Object Marker, as appropriate.[23]

---

[21]If the prefix is a derivational prefix, it must be viewed as one which derives a monotransitive verb from a ditransitive. The lexical entries would be:

(xi) {miiit} 'ask to' [1 (2) (3/Sg)] [+Advance] [+Retreat]
(xii) {aa-miiit} 'ask' [1 (2)] [+Retreat]

[22]So far as I know, a 2 or 3 is always present. An alternative for this verb would be to claim that the final 3 is not really a Theme or an initial 2, but an initial Oblique that advances to 3. I do not have any way of arguing for one of these analyses over the other.

[23]Example (93) is an impersonal passive (see Marlett 1984).

(90) ?intmíiit
?im-t-miiit
1sDO-Rl-ask
'did s/he ask me (F2)?'

(91) ktám kix táitom kmáam kop itmíiit
ktam kix t-aitom kmaam kop i-t-miiit
man the Rl-speak woman the OM-Rl-ask
'the man spoke, he asked the woman (F2)...'

(92) šíiX šo ?ætmíiit
šiiX šo ?æ-t-miiit
thing a 3IO/1sDO-Rl-ask
'did s/he ask me (F2) about something (F3)?'

(93) šíiX šo ?æya?míiit
šiiX šo ?æ-yo-aa?-miiit
thing a 3IO/1sDO-Dt-Pv ask
'I was asked about something (F3)'

5 Alternative analyses

The presentation of the facts that I have made utilizes a multistratal view of syntactic structure. In the initial stratum, Themes are Direct Objects, which is not unusual. Goals may be Indirect Objects or Goals in the initial stratum, however, depending on the verb's subcategorization frame. In this section I consider two alternative analyses.

Baker 1988 suggests that perhaps 2-3 Retreat should be viewed as quirky case, "in which the argument is a true object of the verb, but the verb assigns it some exceptional Case as a lexical property, rather than the usual accusative Case (p. 489n)." To make such a claim explicit for Seri, consider again an example discussed above:

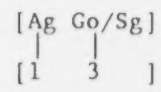
(94) míno kʷikitaɬ?áa ?míimšo
mi-ano ko-ika-itaɬ?áa ?-mi-amšo
2P-in 3IO-InfI-buy/sell 1sST-Px-want
'I want to sell it (F3) to you (pl.) (FObl)'

I claimed that the verb {itaɬ?áa} 'sell' requires 2-3 Retreat. If we were to adopt the quirky case marking solution for this verb, we would expect the subordinate clause above to be *transitive*, despite the fact that the Theme determines indirect object agreement. However, every test indicates that these clauses are unequivocally intransitive. For example, in the Seri sentence above, the intransitive allomorph of the infinitive prefix occurs. A quirky case solution is therefore not adequate to describe the observed facts.

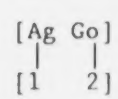
In a second alternative analysis, the facts might be accommodated by a lexicalized mapping between semantic roles and initial grammatical relations that varies from verb to verb. The subcategorization frames for select verbs would be:

(95) {amxk} 'deliver' [Ag Th (Go/Sg)]
| | |
[1 2 3]

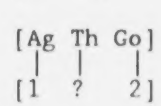
(96) {ææti} 'give'



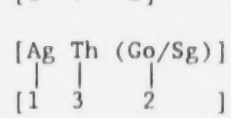
(97) {ai} 'tell'



(98) {æCæ} 'give'

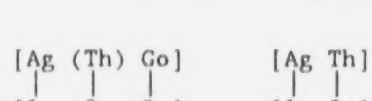


(99) {aasot} 'lend'



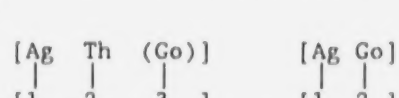
For the verbs shown above, there is perhaps no great problem (although for verbs such as {æCæ} 'give' it may be unclear what grammatical relation would be posited for the Theme that would be comparable to Chomeur). Nevertheless, for the verb {šaX^{w}} 'discuss', the matter is more complicated. Two frames are needed: one for when a Goal is present, and one for when one is not. This represents a complication not present in the bistratal analysis.

(100) {šaX^{w}} 'discuss'



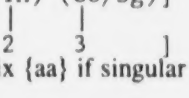
Now consider the verbs which are sensitive to the presence or absence of initial 3s (under the multistratal analysis).

(101) {isX^{w}} 'hide'



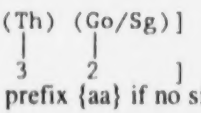
Morphology: Dative prefix <A> if Goal is present.

(102) {amX} 'say'



Morphology: Dative prefix {aa} if singular Goal is present.

(103) {miiit} 'ask'



Morphology: Antidative prefix {aa} if no singular Goal is present.

As pointed out earlier, the Goals in question are not always Indirect Objects, and not always Direct Objects (superficially). A monostratal analysis cannot successfully link the Dative registration morphology and grammatical relations. But an attempt to link it with semantic roles, as shown above, is also deficient, because it duplicates the subcategorization restriction on *singular* Goals. The bistratal analysis is successful, however, because it makes reference to initial Indirect Objects.

6 Conclusions

This paper contributes to several areas of our knowledge of human language. First, it shows that the notion of Indirect Object is clearly relevant in the Seri language . and that it is distinct both from Direct Object and from semantically similar Oblique relations. This presents a challenge to theories of syntax which have attempted to avoid this grammatical relation.

Second, it shows that Seri represents another case where there is a more complicated mapping between the semantic role of Goal and initial grammatical relations. Goals are sometimes Indirect Objects and sometimes Obliques; verb subcategorization is significant. The Universal Alignment Hypothesis, or its analog in other theories, must be weakened (again).

Third, the analysis provides additional arguments against the Chomeur Law. Some verbs display Object Reversal, with the initial Indirect Object becoming a Direct Object, and the initial Direct Object becoming an Indirect Object.

Fourth, the Seri facts show that morphological registration may be sensitive to the presence of a nominal which bears a particular initial grammatical relation.

Fifth, I have shown how the adoption of the Minimality Principle permits a significant restriction on the grammar of Seri. It correctly predicts that certain revaluations are not attested, and that certain others are.

ABBREVIATIONS

<A>	the morpheme potentially ablauts vowel of following morpheme
Ab	Absolutive
AdS	Adverbial Suffix
Ag	Agent
AN	Action/oblique Nominalizer
Aux	Auxiliary
Dec	Declarative
Dt	Distal
Em	Emphatic
Go	Goal
Im	Imperative
InfI	Infinitive, Intransitive allomorph
InfT	Infinitive, Transitive allomorph
Int	Interrogative
Ir	Irrealis
M	Multiple action
N	Negative
OM	Object Marker
Pl	Plural
Pv	Passive
Px	Proximal
Rl	Realis
Sg	Singular

SN	Subject Nominalizer
<SR>	Stress Retracting morpheme
Th	Theme
US	Unspecified Subject or possessor
1IO, 2IO, 3IO	First, Second, Third person Indirect Object
1sDO	First person singular Direct Object
1pDO	First person plural Direct Object
1sSI	First person singular subject, Intransitive allomorph
1sST	First person singular subject, Transitive allomorph
1P, 2P, 3P	First, Second, Third person possessor
1Pro	First person Pronoun

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SERI KINSHIP TERMINOLOGY

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1 Introduction
2 Nonkinship terms
  2.1 Derived from verbs
  2.3 Unpossessed nouns
3 Kinship terminology
  3.1 Grandkinsman terms
  3.2 Parent and child terms
  3.3 Sibling terms
  3.4 Collateral parent and child terms
  3.5 Affinal terms
4 Reference to deceased persons

1 Introduction

The Seri language contains over fifty kinship terms, and as such represents one of the most highly elaborated kinship systems described to date.[2] A list of these terms was given in Kroeber 1931, although Kroeber's list was (understandably) incorrect in certain ways. Our discussion of the Seri kinship terminology centers around, but is not limited to, the set of obligatorily possessed noun stems which are inflected with the following possessive prefixes.

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[1]The Seri people live along the mainland coast of the Gulf of California in Sonora, Mexico. For more information on the people and culture, see Felger and Moser 1985 and the references cited there. This paper is based on data collected primarily by the first author and her husband since 1952. A primary source of information has been Roberto Herrera Marcos, for whose invaluable help we are greatly indebted, but many other people were also consulted and data were gathered during periods of residence in the village of Desemboque. We thank Ruth Brend, Jane Hill, and William Merrifield for comments and help on earlier drafts of this paper and absolve them of responsibility for the remaining deficiencies.

The Seri terms are written in the orthography currently in use by the Seri people with the exception that stress marks have been added to aid in pronunciation. Stress is marked when it does not occur on the first syllable of the word. (Stress generally falls on the first syllable of the root, although there are numerous exceptions.) The orthographic symbols which do not roughly correspond to their counterparts in Spanish include: *e* for a low front vowel (like the vowel of *cat*), double vowels for length, *h* for glottal stop, *z* for a voiceless retroflex sibilant (similar to the *sh* of *ship*), *x* for a back velar fricative, *l* for a voiceless lateral fricative, and *cö* for the labialized velar stop. The phoneme *m* is sometimes pronounced as a velar nasal, as in ***comcáac*** [koŋkáak] 'people, Seris', and sometimes as a nasalized labiovelar glide, as in ***cmique*** [kʷ̃íkæ] 'person, Seri'. For further information on the Seri language, see Marlett 1981, 1988, Marlett and Stemberger 1983. This article has appeared (in Spanish) in *Anales de Antropología*, published by the Universidad Nacional Autónoma de México (1989, 26:367-88).

[2]The Seri people have an intricate system of speaking and giving relationships. This system does not appear to be closely tied to the kinship system, however.

(1)	First person	*hi-*
	Second person	*ma-*
	Third person	*a-*

Only kinship terms carry the prefix set in (1), which contrasts in the second and third person with the person prefix set used with other possessed nouns and nominalized verbs. The nonkinship possessive prefixes are given in (2).

(2)	First person	*hi-*
	Second person	*mi-*
	Third person	*i-*

This paper is organized as follows. In Section 2 we discuss various kinds of terms which, although used to refer to kinsmen, are special in that they are either unpossessed nouns or nouns derived from verbs. They are not kinship terms insofar as word class is concerned. In Section 3 we present the basic kinship terms and their extended meanings; no detailed analysis is given. In Section 4 we present the terminology used for deceased persons.

2 Nonkinship terms

2.1 Derived from verbs

Some commonly used Seri expressions for kinsmen are derived from verbs. The expressions ***iha hocóa*** 'my adult blood kinsmen', ***iha mocóa*** 'your adult blood kinsmen', and ***iha ocóa*** 'his/her adult blood kinsmen' are composed of the word ***iha*** (of uncertain meaning) and the object nominalized form of the verb ***quiya*** 'know' (root: {*-aa*}). The passive subject nominalized form occurs in ***iha hapáa*** 'adult blood kinsmen'. Related expressions are ***iha pti quiya*** 'kinsmen', which includes the word ***pti*** 'together' and the active subject nominalized form of 'know'; and ***xica quih hocóa*** 'my nonadult blood kinsmen', which includes the word ***xica*** 'things' and ***quih*** 'the (sg.)'. If one doesn't know who his kinsmen are because he doesn't know who his father is, he might say ***Hihíha zo htcmáaho*** 'I don't know my ***iha***.' Yet another way to refer to kinsmen is by the expression ***comcáac quihíin cayáxi*** 'people who are close', i.e. 'people who surround'.

The expressions ***hiiquet***, ***hiicto*** 'my child, my children' are used by a woman to refer to her children. These terms are object nominalizations derived from the verb ***quiiquet*** 'to be pregnant (with)'. Compare also: ***miiquet*** 'your child' and ***iiquet*** 'her child'. There is no kinship term otherwise used by women to refer to their children.

The verbs ***caazi*** 'carry' (sg. object) and ***coon*** 'carry (pl. object)' are used in various ways to refer to one's father. The subject nominalized forms of these verbs (the citation form used above) with a direct object prefix (written in the orthography as a separate word and distinct from the possessive prefixes in most cases) yields such words as ***him cáazi*** 'my father' ('the one who carried me'), ***ma cáazi*** 'your father' ('the one who carried you'), ***hazi cóon*** 'our father' ('the one who carried us'), and ***mazi cóon*** 'your (pl.) father' ('the one who carried you (pl.)'). The object nominalized forms are also commonly used: ***ihyáazi*** 'my child (man speaking)' ('the one that I carried'), ***hoén*** 'my children (man speaking)' ('the ones that I carried').

The verb ***ical*** 'accompany' yields the most commonly used expressions for spouse.

This verb is unique in Seri in that it has two possible object nominalization paradigms, one with prefix set (1) and one with prefix set (2). Only the former has the meaning of spouse: ***hiyal*** 'my spouse', ***maal*** 'your spouse', ***aal*** 'his/her spouse'. The latter has the productive meaning: ***hiyal*** 'the one I accompany', ***miyal*** 'the one you accompany', ***iyal*** 'the one s/he accompanies'. Another expression for husband is ***ctam ihyacóxl*** 'the man that I watch over'.

The verb ***moca*** 'come' is nominalized in an expression for parent(s): ***iti hmiha ctam*** 'my father' ('the male one that I come from'), ***iti hmiha cmaam*** 'my mother' (the female one that I come from'), ***iti mmihat*** 'your parents', ***iti mihat*** 'his/her parent'. (The words ***ctam*** 'male' and ***cmaam*** 'female' are often used here and in a few other expressions discussed below.) This verb also figures into the expression ***Zo mmihaya?*** 'How is s/he related to you?' (literally, 'How is your coming?').

The verb ***cyacj*** 'call sibling/cousin' has the following object nominalizations which are commonly used: ***hoyácj*** 'my sibling/cousin' ('the one I call sibling/cousin'), ***moyácj*** 'your sibling/cousin', ***oyácj*** 'his/her sibling/cousin', ***hoyácalcam*** 'my siblings/cousins', etc. In order to clarify whether someone referred to in this way is a sibling or a cousin, the following forms are used (obscurely based on ***caazi*** 'carry' and ***quiiquet*** 'be pregnant (with)' mentioned above): ***hiquipáazi*** 'with the same father as me', ***hiqui impáazi*** 'with a different father than mine', ***hiqui ipéquet*** 'with the same mother as me', ***hiqui impéquet*** 'with a different mother than mine'. Also, one may use the modifier ***aamo*** 'far': ***aamo hoyácj*** 'my cousin'.

The term for step-parent is based on the verb ***quicomíquet*** 'have someone as stepchild', which is in turn based on the kinship term ***acomíque*** 'stepchild: ***him quicomíquet*** 'my step-parent' ('the one who has me as a stepchild'), ***ma quicomíquet*** 'your step-parent' ('the one who has you as a stepchild'), ***quicomíquet*** 'his/her step-parent' ('the one who has him/her as a stepchild').

2.2 Unpossessed nouns

There are a few words which are not possessed nouns which may be used to refer to kinsmen. The words ***comcáii*** 'old woman' and ***cmaacoj*** 'old man' are sometimes used in reference to or when addressing one's mother or wife and father or husband, respectively. Similarly, ***comcáac queej*** 'old people' may be used to refer to the parents. The noun ***haméen*** refers to a family (and also to the interior of a house). The term ***hantx mocat*** 'who come from the base' (since the Seris think of their ancestors as being on the bottom of the pile) refers to ancestors in general.

Finally, the term ***hamác*** is used for the person who has certain responsibilities, including sponsoring puberty fiestas and burial. One's ***hamác*** may or may not be a relative. For more details, see Felger and Moser 1985:6-8.

3 Kinship terminology

Fifty-four kinship terms occur in Seri. (See the Appendix; the numbers in parentheses following a term cited below refer to this appendix.) We believe that all of these are elementary terms synchronically in that they cannot be analyzed into smaller parts. Some of the kinship terms were probably compounds historically, but irregular phonological changes have caused them to be considered as separate terms here. Nineteen of

these terms are used only if ego is male and nineteen are used only if ego is female. For sixteen terms the sex of ego is not relevant. The sex of the referent is relevant for all of the terms except for nieces and nephews, grandchildren, stepchildren, and (for male ego) parents-in-law. Many terms make reference to whether a person is older or younger than ego or than ego's parent; Seri has bifurcate collateral terminology. Two kinship terms are not included in the appendix since they are currently considered vulgar: ***hicám*** 'my husband' and ***hicom*** 'my wife'. These terms probably figure into the derivation of two of the other kinship terms, however, as we show below.

The terms are given in three forms in the appendix, and unless otherwise stated the forms cited below in discussions are the first person possessed forms. The second person possessed form may be formed by adding an ***m*** to the beginning of the third person possessed form. The absolutive forms listed are used only rarely, in expressions such as "it is necessary to wash one's father's shirts". The dictionary (Moser, in preparation) also lists the plural forms of each of these nouns since plural nouns in Seri are highly irregular. Various suffixes and stem modifications are used to indicate plurality. The dictionary also lists some verbs which are derived from these kinship terms by means of the prefix ***i-***. The derived verbs mean 'have someone as (kin)'; for example: ***quisáacat*** 'have someone for a son', based on the root {***-saac***} of the term ***hisáac*** 'son'.

3.1 Grandkinsman terms

There are eight grandkinsman terms. These distinguish the sex of senior kinsman, bifurcation, and seniority. The analysis given in the second column is based on Merrifield (1980).[3] Sex, m(ale) or f(emale), is indicated following an abbreviation for the relationship, P(arent), or C(hild), where the first implicit term is ego. Therefore mCmC refers to a male ego's male child's child and PmPm refers to ego's male parent's male parent. Merrifield also develops rules for deriving the extended meanings of kinship terms; we do not present these here.

(3)	***hipaz*** (31)	PmPm	parallel grandfather
	hiict (20)	PfPf	parallel grandmother
	heaz (2)	PfPm	cross grandfather
	himaz (27)	PmPf	cross grandmother
	hiquípaz[4] (40)	mCmC	man's parallel grandchild
	hicáac (5)	fCfC	woman's parallel grandchild
	hiquézi (38)	mCfC	man's cross grandchild
	hicáasac (6)	fCmC	woman's cross grandchild

The terms for grandparents extend to certain great aunts and uncles as well, as shown in (4-5). The diagram in (5) shows this, where "S" stands for "spouse" and "E" for "ego".[5] For example, the term for ego's paternal grandmother (PmPf) also applies to ego's father's mother's sister (PmPfPCf) and ego's father's mother's brother's wife (PmPfPCmS).

[3]Also see discussion, explication, and illustration of this approach in Merrifield 1981.

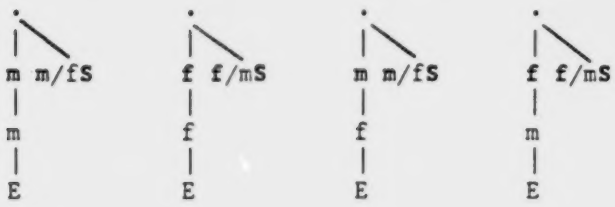
[4]The term ***hiquípaz*** may be derived from ****him quípaz*** (literally 'the one who has me for a grandfather'), a form based on a verb derived from ***apaz*** (31) 'his grandfather'.

[5]The latter is an innovation we introduce to Merrifield's abbreviations for the purpose of exposition.

(4)

	Primary	Extended	Extended
hipaz	PmPm	PmPmPCm	PmPmPCfS
hiict	PfPf	PfPfPCf	PfPfPCmS
heaz	PfPm	PfPmPCm	PfPmPCfS
himaz	PmPf	PmPfPCf	PmPfPCmS

(5)



hipaz ***hiict*** ***heaz*** ***himaz***

Certain great aunts and uncles by marriage (PmPmPCmS, PmPfPCfS, PfPfPCfS, PfPmPCmS) are not included in these extensions, and there is no term for them since they are not considered to be kin. We have elicited, but not observed, the fact that one's grandmothers and grandfathers can be distinguished from great aunts and uncles by the use of the modifiers ***isoj*** 'true' and ***heeque*** 'young' (regardless of whether the great aunt or uncle is older or younger than the grandparent).

We have observed a woman use the absolutive form of 'grandfather' ('father's father') with the subject nominalized form of 'dead' (typically used for animals) in a curse: ***hapaz coxi***.

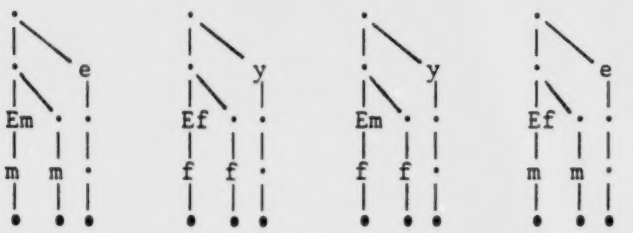
The terms for grandchildren extend to grandnephews and grandnieces, and also to the grandchildren of cousins, as shown in (6-7). The abbreviations ***e*** (for "elder") and ***y*** (for "younger") at the beginning of Merrifield's notation for these terms indicate priority or nonpriority of relationship, respectively.[6] For example, the term ***hicáac*** has the primary meaning of a woman's daughter's child (fCfC), but it also applies to a woman's niece's child (fPCCfC), and to a great-grandchild of a younger sibling of a woman's parent (yfPPCCCC).

(6)

	Primary	Extended	Extended
hiquípaz	mCmC	mPCCmC	emPPCCCC
hicáac	fCfC	fPCCfC	yfPPCCCC
hiquézi	mCfC	mPCCfC	ymPPCCCC
hicáasac	fCmC	fPCCmC	yfPPCCCC

[6]Merrifield claims that, while the meaning of "e" and "y" must be defined for a particular kinship system, it is sufficient to indicate priority only once in the string. He arbitrarily chooses to indicate it at the beginning.

(7)



hiquípaz *hicáac* *hiquézi* *hicáasac*

3.2 Parent and child terms

There are five terms for parents and children, excluding the vulgar terms and the derived terms mentioned in section 1. They distinguish priority, sex of senior kinsman, and sex of kinsman. The system is defective in two ways. First, when the sex of the senior kinsman is female, the sex of the other member of the dyad is not marked. Second, there are no kinship terms from this set for a woman's son or daughter. Recall that the expression ***hiiquet*** 'my child', derived from the verb ***quiiquet*** 'be pregnant (with)', is used by a woman.

(8)	***hii***[7] (19)	mPm	man's father
	him (23)	fPm	woman's father
	hita (42)	Pf	mother
	hisáac (41)	mCm	man's son
	heec (3)	mCf	man's daughter

These terms do not have any extended meanings.

There is one step-relation term: ***hicomíque*** 'stepchild'.[8]

3.3 Sibling terms

There are nine sibling terms, distinguishing priority, sex of ego, and sex of alter.

(9)	***hixíiha*** (49)	ePCm	older brother
	hinyáac (29)	emPCm	man's older brother
	himáac (24)	efPCm	woman's older brother
	hipáac (30)	emPCf	man's older sister
	hizáac (50)	efPCf	woman's older sister

[7]It was apparently common in previous generations, but not now, for a man to be referred to as the father of his dog. Most often the dogs were named for a mountain in the family's ancestral area. Manuel Encinas was known as ***Camota Quih Ai*** 'father of Camota'. Camota was his dog, which was named for a mountain near Pozo Peña. Luis Torres had a dog whose name was ***Pootli*** (baby talk for the loanword ***pootsi*** 'too short'). Luis Torres' father, Buro Alazán, was called ***Pootli Quih Apaz*** 'grandfather of Pootli'.

[8]The term ***hicomíque*** is probably derived from ***hicom*** 'wife' (discussed in the first paragraph of Section 2) followed by a shortened form of ***iiquet*** 'her child' (see Section 1).

hizcz (51)	ymPCm	man's younger brother
hicaz (11)	yfPCm	woman's younger brother
hicóome (17)	ymPCf	man's younger sister
hitcz (45)	yfPCf	woman's younger sister

Terms may be modified to indicate different persons, in the cases where more than one is possible. One way commonly used for siblings is illustrated below with the term ***hizcz*** 'younger brother'.

(10) a. ***hizcz caii*** 'the oldest of my younger brothers'
b. ***hizcz quisil*** 'the youngest of my younger brothers'
c. ***hizcz imac caap*** 'the middle one of my younger brothers'

Some of these terms extend to all members of ego's generation and to all members of the third generation from ego-older sibling terms to great-grandchildren and younger sibling terms to great-grandparents. Two of the terms for older brother, ***hinyáac*** and ***himáac***, do not. The modifier ***aamo*** 'far' may precede a term to indicate that the cousin is intended rather than the sibling. The Seri kinship system is of the Hawaiian type (Murdock 1949:223) since cross and parallel cousins are called by the same terms as those used for siblings.

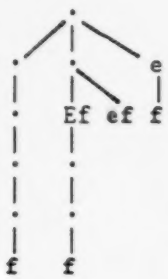
(11)

	Primary	Extended	Extended	Extended
hixíiha	ePCm	CCCm	ePPCCm	ePPCCCCm
hipáac	emPCf	mCCCf	emPPCCf	mPPCCCCCf
hizáac	efPCf	fCCCf	efPPCCf	fPPCCCCCf
hizcz	ymPCm	mPPPm	ymPPCCm	
hicaz	yfPCm	fPPPm	yfPPCCm	
hicóome	ymPCf	mPPPf	ymPPCCf	
hitcz	yfPCf	fPPPf	yfPPCCf	

(12)

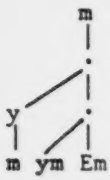
hixíiha

hipáac



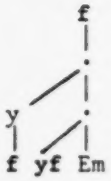
hizáac

(13)

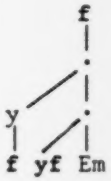


hizcz

hicaz



hicóome



hitcz

3.4 Collateral parent and child terms

Thirteen terms are used for collateral parents and children, distinguishing bifurcation, priority of linking kinsman, priority of kinsman, and sex of senior kinsman. The Merrifield notation for parallel kinsman is '=' and for cross kinsman is 'x'.

(14)			
	himáhaj (25)	e=PPCm	father's older brother
	hiitz (22)	y=PPCm	father's younger brother
	hixáac (48)	xPPCm	mother's brother
	hizmíi (52)	xPPCm	mother's brother
	ihyáac (54)	xPPCf	father's sister
	hitmáhaj[9] (47)	e=PPCf	mother's older sister
	hintáac (28)	y=PPCf	mother's younger sister
	hiquíitaz (39)	e=mPCC	man's elder brother's child
	hipxaz (32)	e=fPCC	woman's elder sister's child
	hicmáhaj (12)	y=mPCC	man's younger brother's child
	hitcamáhaj (46)	y=fPCC	woman's younger sister's child
	heac (1)	xmPCC	man's sister's child
	hizóoc (53)	xfPCC	woman's brother's child

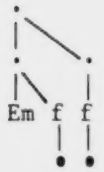
The term ***hixáac*** (48) 'mother's brother' is considered archaic. Term (52) ***hizmíi*** in its plural form ***hizmíiyat*** is used for kinsmen in general. Otherwise, the terms for aunts and uncles do not have extended meanings. The terms for nieces and nephews are extended as shown below.

(15)	Primary	Extended
hiquíitaz	e=mPCC	emPPCCC
hipxaz	e=fPCC	efPPCCfC
hicmáhaj	y=mPCC	ymPPCCC
hitcamáhaj	y=fPCC	yfPPCCfC
heac	xmPCC	mPPCCfC
hizóoc	xfPCC	fPPCCmC

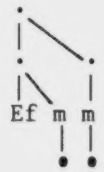
(16)

hiquíitaz ***hipxaz*** ***hicmáhaj*** ***hitcamáhaj***

[9]The forms ***hitmáhaj*** (47) 'mother's older sister' and ***himáhaj*** (25) 'father's older brother' may be related to ***hita*** (42) 'mother' and ***hii*** (19) 'father', respectively. The morph ***mahaj*** also appears in ***hicmáhaj*** (12) and ***hitcamáhaj*** (46), although the significance of this is not clear.



heac



hizóoc

3.5 Affinal terms

There are seventeen affinal terms, distinguishing priority and sex of alter, priority and sex of linking kinsman, and sex of ego. One term, ***hicmajéete*** (13), is used in two ways and so is listed twice. The affinal terms are described in the Merrifield notation with the symbol S (for spouse) in the appropriate position.

(17)	***heequéect*** (4)	mSP	man's parents-in-law
	hiquémez (36)	fSPf	woman's mother-in-law
	hiquépez[10] (37)	fSPm	woman's father-in-law
	hicacám[11] (7)	CfS	son-in-law
	hicámaz (9)	CmS	daughter-in-law
	hicmajéete (13)	emSPCf	wife's older sister
	himaquéte (26)	ymSPCf	wife's younger sister
	hiquéemot (34)	mSPCm	wife's brother
	hicméhej (15)	efSPCm	husband's older brother
	hiquéetz (35)	yfSPCm	husband's younger brother
	hiquéec (33)	fSPCf	husband's sister
	hicáitz (8)	efPCfS	woman's older sister's husband
	hitcmajéem (44)	yfPCfS	woman's younger sister's husband
	hictám cöcaii[12] (18)	mPCfS	man's sister's husband
	hicatazáta[13] (10)	emPCmS	man's older brother's wife
	hicmajéete (13)	ymPCmS	man's younger brother's wife
	hicóaac (15)	fPCmS	woman's brother's wife
	hiilx cmaam (21)	fSPCmS	husband's brother's wife
	hitalxícom (43)	mSPCfS	wife's sister's husband

The term ***heequéect*** (4) 'parent-in-law' is used with either ***ctam*** 'male' or ***cmaam***

[10]It is probable that the forms ***hiquépez*** and ***hiquémez*** are related historically to the forms ***hipaz*** (31) 'father's father' and ***himaz*** (27) 'father's mother'.

[11]The term ***hicacám*** may be derived originally from ***heec*** (3) 'daughter' followed by ***acám*** 'her husband' (see the first paragraph of section 2).

[12]The second part of the term ***hictám cöcaii*** is related to the adjective ***caii*** 'mature', as indicated by their plurals: ***hictám cöqueej***, ***queej***.

[13]This term ***hicatazáta*** may be derived from ***hiquíitaz*** (39) 'older brother's child' followed by ***ata*** (42) 'his/her mother'.

'female' following it.[14] (***Cmaam*** also always appears in the expression ***hiilx cmaam*** (21) 'husband's brother's wife'.)

The extended meanings of these terms are shown below, although the graphic displays are not as exact as the Merrifield notation in a few cases.

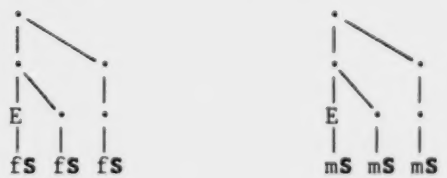
(18)

	Primary	Extended
heequéect	mSP	mSPPC
hiquémez	fSPf	fSPPCf
hiquépez	fSPm	fSPPCm
hicacám	CfS	PCCfS, PPCCCfS
hicámaz	CmS	PCCmS, PPCCCmS
hicmajéete	emSPCf	
hicméhej	efSPCm	efSPPCCm
hiquéetz	yfSPCm	fS(P)PPm, fSPPPCm, yfSPPCCm
himaquéte	ymSPCf	mS(P)PPf, mSPPPCf, ymSPPCCf
hiquéec	fSPCf	fS(P)PPf, fSPPPCf, fSPPCCf
hiquéemot	mSPCm	mS(P)PPm, mSPPPCm, mSPPCCm
hicáitz	efPCfS	fCC(C)fS, efPPCCfS, fPPCCCC(C)fS
hicatazáta	emPCmS	mCC(C)mS, emPPCCmS, mPPCCCC(C)mS
hitcmajéem	yfPCfS	yfPPCCfS
hicmajéete	ymPCmS	ymPPCCmS
hictám cöcaii	mPCfS	mCC(C)fS, mPPCCfS, mPPCCCC(C)fS
hicóaac	fPCmS	fCC(C)mS, fPPCCmS, fPPCCCC(C)mS
hiilx cmaam	fSPCmS	fSPPPPCmS, fSPPCCmS
hitalxícom	mSPCfS	mSPPCCfS

(19)

heequéect ***hiquémez*** ***hiquépez***

(20)



hicacám ***hicámaz***

[14]This word ***heequéect*** is highly unusual phonologically in Seri since it has a noticeably long vowel in a syllable preceding the stressed syllable.

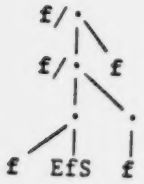
(21)

hicmajéete

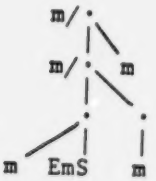
hicméhej

hiquéetz

himaquéte

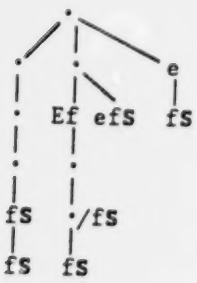


hiquéec

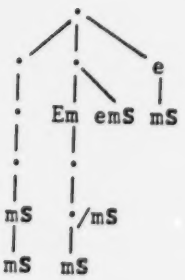


hiquéemot

(22)



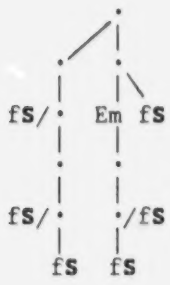
hicáitz



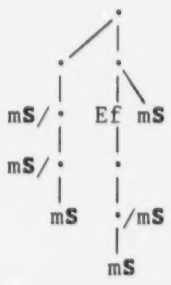
hicatazáta

hitcmajéem

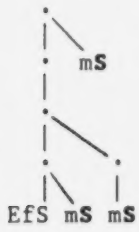
hicmajéete



hictám cöcaii



hicóaac



hiilx cmaam

hitalxícom

4 Reference to deceased persons

Special expressions are used to refer to deceased persons. The expressions begin with ***ziix*** 'thing' or ***xica*** 'things', and may include the modifier ***caixaj*** 'who is strong' (pl. ***cailajc***) if the deceased person was an older person than the speaker or ***cmotómn*** 'who is weak' if the deceased was younger. One therefore would say ***ziix caixaj Juan*** to refer to a deceased man named Juan who was older than one. (An alternative would be ***ziix cmique caii ctam Juan*** 'thing Seri mature man Juan'. The exception to this generalization is that if the deceased was a brother, the modifier ***cmotómn*** 'who is weak' is used, and if a sister, the modifier ***caixaj*** 'who is strong' is used, regardless of the relative age of the sibling.

Some expressions are composed of the normal kinship or nonkinship term preceded by ***ziix*** 'thing'. (These are generally used only after some period of time has elapsed after the death.) The kinship term may use the special emphatic first person prefix ***hati-*** rather than ***hi-***.

(23) a. ***ziix iti hmiha (caixaj) ctam***
'my deceased father'
b. ***ziix iti hmiha (caixaj) cmaam***
'my deceased mother'
c. ***ziix iti miha mos toii ziix iti miha***
'his/her deceased parent's deceased parent'

(24) a. ***ziix hateequéect*** 'my deceased parent-in-law'
b. ***ziix hoyácj / hatoyácj*** 'my deceased sibling/cousin'
c. ***ziix hinyáac / hatinyáac*** 'my deceased older brother'
d. ***ziix himáac*** 'my deceased older brother'
e. ***ziix hiquémez*** 'my husband's deceased mother'

There are also several special circumlocutions to refer to deceased kinsmen, including those below. The following expressions are used to refer to one's deceased spouse,

(25) a. ***ziix ihyacái quipnáil***
'thing that I followed who had a skirt'
b. ***ziix caixaj Francisca quih yacái***
'deceased Francisca's husband'
c. ***ziix ihax icx hihíih***
'thing that I was with'
d. (grandchild's name) ***quih ata quih ziix iti miha***
'(grandchild's name)'s mother's father'

to one's deceased child(ren),

(26) a. ***ziix cmotómn hicot quiih***
'weak thing that was with us'
b. ***ziix itlén [an]o hoah***
'thing I held in (my) palm'
c. ***xica itlén [an]o hooquim***
'things I held in (my) palm'

to one's deceased mother,

(27) ***ziix itlén [an]o him quih quipnáil***
'thing with a skirt that held me in (her) palm'

to one's deceased grandparent,

(28) a. ***ziix (caixaj) ihyáa cáii***
'strong (mature) thing that I had'
b. ***xica (cailajc) ihyáa quéej***
'strong (mature) things that I had'

and to one's son-in-law and daughter-in-law.

(29) ***ziix cmotómn (quipnáil) hicot quiih***
'weak thing (who had a skirt) that was at our side'

APPENDIX: KINSHIP TERMS

	'my ...'	'his/her ...'	Absolutive	
1	*heac*	*aac*	*haacat*	xmPCC
2	*heaz*	*aaz*	*hapéez*	PfPm
3	*heec*	*eec*	*heequet*	mCf
4	*heequéect*	*aaquéect*	*haaquéect*	mSP
5	*hicáac*	*acáac*	*hacáac*	fCfC
6	*hicáasac*	*acáasac*	*hacáasac*	fCmC
7	*hicacám*	*acacám*	*hacacáma*	CfS
8	*hicáitz*	*acáitz*	*hacáitz*	efPCfS
9	*hicámaz*	*acámaz*	*hacámaz*	CmS
10	*hicatazáta*	*acatazáta*	*hacatazáta*	emPCmS
11	*hicaz*	*acaz*	*hapéquez*	yfPCm
12	*hicmáhaj*	*acmáhaj*	*hacmáhaj*	y=mPCC
13	*hicmajéete*	*acmajéete*	*hacmajéete*	emSPCf; ymPCmS
14	*hicméhej*	*acméhej*	*hacméhej*	efSPCm
15	*hicóaac*	*acóaac*	*hacóaacat*	fPCfS
16	*hicomíque*	*acomíque*	*hacomíquet*	stepchild
17	*hicóome*	*acóome*	*hacóome*	ymPCf
18	*hictám cöcaii*	*actám cöcaii*	*hactám cöcaii*	mPCfS
19	*hii*	*ai*	*hapée*	mPm
20	*hiict*	*act*	*hapéct*	PfPf
21	*hiilx cmaam*	*alx cmaam*	*halx cmaam*	fSPCmS
22	*hiitz*	*aitz*	*hapéetz*	y=PPCm
23	*him*	*am*	*hapéme*	fPm
24	*himáac*	*amáac*	*hamáacat*	efPCm
25	*himáhaj*	*amáhaj*	*hamáhaj*	e=PPCm
26	*himaquéte*	*amaquéte*	*hamaquéte*	ymSPCf
27	*himaz*	*amaz*	*hapémez*	PmPf
28	*hintáac*	*antáac*	*hantáacat*	y=PPCf
29	*hinyáac*	*anyáac*	*hanyáacat*	emPCm
30	*hipáac*	*apáac*	*hapáacat*	emPCf
31	*hipaz*	*apaz*	*hapépez*	PmPm
32	*hipxaz*	*apxaz*	*hapépxaz*	e=fPCC
33	*hiquéec*	*aquéec*	*haquéec*	fSPCf
34	*hiquéemot*	*aquéemot*	*haquéemot*	mSPCm
35	*hiquéetz*	*aquéetz*	*haquéetz*	yfSPCm
36	*hiquémez*	*aquémez*	*haquémez*	fSPf
37	*hiquépez*	*aquépez*	*haquépez*	fSPm
38	*hiquézi*	*aquézi*	*haquézi*	mCfC
39	*hiquíitaz*	*aquíitaz*	*haquíitaz*	e=mPCC
40	*hiquípaz*	*aquípaz*	*haquépez*	mCmC
41	*hisáac*	*asáac*	*hasáacat*	mCm
42	*hita*	*ata*	*hapéte*	Pf
43	*hitalxícom*	*atalxícom*	*hatalxícom*	mSPCfS
44	*hitcmajéem*	*atcmajéem*	*hatcmajéem*	yfPCfS
45	*hitcz*	*atcz*	*hapétcaz*	yfPCf
46	*hitcamáhaj*	*atcamáhaj*	*hatcamáhaj*	y=fPCC
47	*hitmáhaj*	*atmáhaj*	*hatáhaj*	e=PPCf

48	*hixáac*	*axáac*	*haxáacat*	xPPCm
49	*hixíiha*	*axíiha*	*haxíihat*	ePCm
50	*hizáac*	*azáac*	*hazáacat*	efPCf
51	*hizcz*	*azcz*	*hapézcaz*	ymPCm
52	*hizmíi*	*azmíi*	*hazmíi*	xPPCm
53	*hizóoc*	*azóoc*	*hazóocat*	xfPCC
54	*ihyáac*	*ayáac*	*hayáacat*	xPPCf

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QUIEGOLANI ZAPOTEC PHONOLOGY

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3 Consonants
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1 Introduction

Quiegolani Zapotec[1] (henceforth QZ) words contain initial consonant clusters of two or even three consonants and most of these consonant clusters show a decreasing slope of sonority. This violates sonority constraints proposed by Greenberg in 1978 and further discussed by Bell and Saka (1983). This, however, is understandable when viewed from a diachronic perspective. This will be discussed in section 6.4.

Further, QZ, like most Zapotec languages, has a lenis-fortis distinction among some of its consonants. However, this distinction is less clear in QZ than in other Zapotec languages and carries a lower functional load.

2 Phonemes

The segmental inventory of QZ is given in (1).

(1)

Consonants:	Stops	p	t			k^y	k	k^w
		b	d			g^y	g	g^w
	Affricates		c	č	č̣			
				ǰ				
	Fricatives	(f)	s		ṣ̌		(h)	
			z		ẓ̌			
	Nasals	m	n					
	Liquids		l					
			r					
	Semivowels	w				y		

Vowels:	Simple		Laryngealized	
	i	u	iʔ	uʔ
	e	o	eʔ	oʔ
	æ	a	æʔ	aʔ

[1] Quiegolani Zapotec is spoken by approximately 3000 people living in Santa María Quiegolani and two smaller towns in the district of Yáutepec, Oaxaca, Mexico. It is classified as part of the "Southern Group" of Zapotec languages. Data for this paper were gathered by Sue Regnier and her husband, Randy Regnier, from 1985-90 under the auspices of the Summer Institute of Linguistics. The principal language associates were Martín Hernández Antonio and his sister, Eva Hernández Antonio. I would like to thank Steve Marlett for his help with earlier versions of this paper and Barbara Hollenbach for her help in beating this paper into its final form. My husband, Randy, deserves special thanks for his contribution in collecting data, his helpful discussions of that data, and his invaluable computer expertise which he used in formatting this paper.

The symbol *b* represents a sound that is usually realized as a voiced bilabial fricative [β].

QZ has four contrastive tones: high-rising *(¹)*, high *(²)*, low-rising *(³)*, and low *(⁴)*.

3 Consonants[2]

QZ has 24 consonants in native words and two consonants, *f* and *h*, which occur only in loanwords. They are illustrated below in examples (2) and (3).

(2) Consonants in syllable-initial position

p	pa	'to where'
t	te	'one'
k	ko$^{?4}$	'side of'
k^{y}	k^{y}e-'wan	'mirror'[3]
k^{w}	k^{w}eb^{3}	'new'
b	be^{4}	'echo'
d	da$^{?4}$	'mat'
g	gi^{4}	'embers'
g^{y}	g^{y}o^{2}	'rain'
g^{w}	-g^{w}a	'that'[4]
c	c-a^{2}	'POT-go'
č	či$^{?3}$	'ten'
ǯ	ǯu^{1}	'belly of'
ǰ	ǰe^{2}	'day'
f	fald^{2}	'skirt' (from Sp. *falda*)
s	s-a^{2}	'FUT-go'
š	šù^{3}	'sepal'
h	hug	'juice' (from Sp. *jugo*)
z	za^{4}	'grease'
ž	žį?l^{3}	'cotton'
m	ma$^{?2}$	'animal'
n	no$^{?3}$	'1st exclusive'
l	lo$^{?4}$	'corral'

[2] QZ words not marked for tone indicate holes in my data.

[3] Known morpheme breaks are marked with a hyphen. Most QZ words are monosyllabic. In polysyllabic words stress almost always occurs on the last syllable. Stress is marked on polysyllabic words.

[4] Affixes are marked with a hyphen, as in *-d* 'negative (suffix)' and *s-* 'POS (prefix)'.

r	ren^{4}	'blood'
y	yu$^{\text{ʔ}4}$	'house'
w	wi$^{\text{ʔ}2}$	'dance'

(3) Consonants in coda

p	yap^{4}	'chayote' (a fruit)
t	ǰit^{4}	'egg'
k	mæ$^{\text{ʔ}}$k^{4}	'dog'
k^{y}	r-e$^{\text{ʔ}}$k^{y4}	'HAB-burn'
k^{w}	—	
b	dob^{3}	'maguey'
d	bid^{1}	'scab'
g	bæg^{1}	'comb'
g^{y}	—	
g^{w}	—	
c	g^{y}æc^{4}	'cactus spine'
č	gič^{4}	'grinding stone'
c̆	mic̆^{2}	'snail'
ǰ	me$^{\text{ʔ}}$ǰ^{2}	'mountain lion'
s	nis^{4}	'water'
š	giš^{4}	'net'
z	do$^{\text{ʔ}}$z^{2}	'young corn plant'
ž	gež^{2}	'hut'
m	da$^{\text{ʔ}}$m^{2}	'large owl sp. with ears'
n	bæn^{4}	'mud'
l	ǰil^{4}	'comal'
r	dor^{3}	'pine needle'
y	g^{y}e$^{\text{ʔ}}$y^{4}	'mountain'
w	bæw^{4}	'cloud'

3.1 Obstruents

3.1.1 Contrasts

p vs. *b:*

(4)	onset:	pe-'nak^{2}	'why?'	*vs.*	be^{4}-'nak^{2}	'still'
	coda:	dop^{4}	'intestinal gas'	*vs.*	dob^{3}	'maguey'

b vs. *w:*

(5)	onset:	bki$^{\text{ʔ}}$t^{4}	'rainbow'	*vs.*	wkit^{4}	'toy'
	coda:	do$^{\text{ʔ}}$b^{2}	'feather'	*vs.*	do$^{\text{ʔ}}$w^{4}	'corn crib'

t vs. *d:*

(6) onset: te 'one' *vs.* de^{1} '2nd person'
coda: dut^{2} 'mucus' *vs.* dud^{3} 'breast'

k vs. *g:*

(7) onset: ko$^{?4}$ 'side of' *vs.* go$^{?}$b^{2} 'reed'
coda: mya$^{?}$k^{4} 'raven' *vs.* mṣa$^{?}$g^{3} 'tiny corn'

k^{y} vs. *g^{y}:*

The phoneme *g^{y}* does not occur in the coda of a syllable.

(8) onset: k^{y}e-^{1}wan 'mirror' *vs.* g^{y}e^{4} 'rock'

k^{w} vs. *g^{w}:*

Neither of these phonemes is very common and neither has been found in a syllable coda. However, they are contrasted in these two words:

(9) nk^{w}æ$^{?}$t^{4} 'deaf person' *vs.* ng^{w}a$^{?}$n^{2} 'chili plant'

k vs. *k^{y}* vs. *k^{w}:*

(10) onset: bkun^{3} 'tortilla' *vs.* bk^{y}a$^{?2}$ 'necklace'
vs. bk^{w}æl^{2} 'corn husk'
coda: n-ak^{2} 'ST-be' *vs.* r-ze$^{?}$k^{y3} 'HAB-turn over'

g vs. *g^{y}* vs. *g^{w}:*

(11) onset: gal^{4} 'twenty' *vs.* gyag^{4} 'gourd' *vs.* -g^{w}a 'that'

c vs. *s:*

(12) onset: mcu$^{?3}$ 'mourning dove' *vs.* msi$^{?4}$ 'hawk'
coda: g^{y}æc^{4} 'cactus spine' *vs.* byæs^{4} 'canal'

c vs. *t:*

(13) onset: c-a^{2} 'POT-go' *vs.* tap^{4} 'four'
coda: g^{y}æc^{4} 'cactus spine' *vs.* g^{y}æt^{4} 'tortilla'

c vs. *č* vs. *ç̌*:

(14)	onset:	r-cæ$^{?4}$	'HAB-close'	*vs.*	čey^{2}	'Uncle (title)'
	and	co$^{?}$w	'slowly'	*vs.*	r-ç̌o$^{?}$n^{4}	'HAB-throw'
	coda:	gic^{4}	'hair of'	*vs.*	gič^{4}	'grinding stone'
				vs.	giç̌	'weeding'

č vs. *ç̌*:

The phonemes *č* and *ç̌* do not contrast in the onset (see section 3.1.2). However, they do contrast word-finally as in the following words:

(15) mi$^{?}$č^{3} 'grasshopper' *vs.* mi$^{?}$ç̌^{4} 'crooked plant'

ǰ vs. *č* vs. *ç̌*:

(16)	onset:	mǰin^{3}	'deer'	*vs.*	mčiz^{4}	'squirrel'		
	coda:	meǰ^{4}	'seed'	*vs.*	ngeč^{2}	'yellow'	*vs.* žeç̌^{4}	'onion'

č vs. *š*:

(17)	onset:	čey^{2}	'Uncle (title)'	*vs.*	šen^{4}	'thing of'
	coda:	gič^{4}	'grinding stone'	*vs.*	giš^{4}	'net bag'

č vs. *t*:

(18)	onset:	čey^{2}	'Uncle (title)'	*vs.*	te	'one'
	coda:	gič^{4}	'grinding stone'	*vs.*	ǰit^{4}	'egg'

ç̌ vs. *t*:

(19)	onset:	r-ç̌o$^{?}$n^{4}	'HAB-water'	*vs.*	r-to$^{?4}$	'HAB-sell'
	coda:	giç̌	'weeding'	*vs.*	ǰit^{4}	'egg'

ç̌ vs. *š*:

(20)	onset:	ç̌u^{1}	'belly of'	*vs.*	šu^{3}	'sepal'
	coda:	mi$^{?}$ç̌^{4}	'crooked plant'	*vs.*	mi$^{?}$š^{4}	'chigger'

ǰ vs. *d*:

(21)	onset:	ǰi$^{?}$n^{2}	'work'	*vs.*	di$^{?}$n^{4}	'loan'
	coda:	meǰ^{4}	'seed'	*vs.*	ged^{4}	'tick'

ǰ vs. *ž:*

(22) onset: ǰi$^{?}$n^{2} 'work' *vs.* žị$^{?}$n 'son of'
coda: geǰ 'seven' *vs.* gežᷣ^{2} 'hut'

š vs. *ž:*

(23) onset: šun 'eight' *vs.* žun^{4} 'thread'
coda: gišᷣ^{4} 'net bag' *vs.* gižᷣ^{4} 'leaf, grass'

s vs. *š:*

(24) onset: bsu$^{?3}$ 'adobe' *vs.* bšuz^{4} 'priest'
coda: nes^{4} 'day-before-yesterday' *vs.* nešᷣ^{4} 'fruit'

z vs. *ž:*

(25) onset: zeg 'more-or-less' *vs.* žečᷣ^{4} 'onion'
coda: giz^{2} 'sickness' *vs.* gižᷣ^{4} 'leaf, grass'

s vs. *z:*

(26) onset: bsu$^{?3}$ 'adobe' *vs.* bzu$^{?}$d^{2} 'cap'
coda: nis^{4} 'water' *vs.* niz^{2} 'corn'

3.1.2 Distributional restrictions

Fortis stops are uncommon in word-initial position. The consonant *p* is particularly rare there, occurring in only four morphemes outside of Spanish loanwords: *pa* 'where?', *pe* 'question particle', *pazer* 'perhaps', and *pæt*^{4} 'female genitalia'.

The consonant *k*^{y} occurs in word-final position in only four words which happen to be verb stems: *r-be*$^{?}$*k*^{y4} 'HAB-put', *w-e*$^{?}$*k*^{y4} 'COM-burn', *w-ze*$^{?}$*k*^{y4} 'COM-turn around', and *r-yek*^{y} 'HAB-revolve'. *k*^{w}, *g*^{y}, and *g*^{w} never occur in word-final position.

Consonants with lip-rounding *(k*^{w}, *g*^{w}, and *w)* do not occur before *o*, *o*$^{?}$, *u*, and *u*$^{?}$ in native QZ words, with one exception. When the completive aspect marker *w-* precedes a verb stem with initial *o* or *o*$^{?}$, some QZ speakers pronounce the *w*, and others do not, for example, *w-o*$^{?2}$ or *o*$^{?2}$ 'COM-drink'.

The consonants *y*, *k*^{y}, and *g*^{y} do not occur before *i* or *i*$^{?}$. Similarly, *i* and *i*$^{?}$ do not occur before final *y*.

As was shown in section 3.1.1 above, the phonemes *c*, *č*, *c̓*, and *ǰ* all clearly contrast in syllable coda position. However, in syllable onsets the consonants *č* and *ǰ* usually occur only before the vowels *e* and *i* (simple or laryngealized) in native QZ words. The consonants *c̓* and *c* generally do not occur before *e* and *i*. Two apparently native QZ words do not follow these generalizations: *čab*^{3} 'skirt' and *nwc̓eč*^{2} 'iguana'. Loanwords frequently do not follow these generalizations, as in *ča*^{2}*'mar*^{2} 'sweater' (Sp. *chamarra*) and *c̓er*^{2} 'scissors' (Sp. *tijeras*).

3.1.3 Lenis-fortis distinctions

The following lenis-fortis pairs exist: *p-b; t-d; k-g; k*^{y}*-g*^{y}*; k*^{w}*-g*^{w}*; č-ǰ; s-z;* and *š-ž*. In utterance-final position the distinction between members of these consonant pairs is generally lost, and both lenis and fortis members occur unvoiced with aspiration on stops and affricates. *p* and *b*, however, maintain their distinctiveness in this position, where *p* is [p^{h}] and *b* is the voiceless fricative [ɸ]. Even though members of a lenis and fortis pair generally sound the same in utterance-final position, a native speaker of QZ can probably distinguish the two by the length of the vowel before the consonant. The vowel is slightly shorter before a fortis consonant than before a lenis consonant or in an open syllable. The underlying distinction between lenis-fortis pairs in syllable coda position can be determined by adding the clitic pronoun *o*^{2} '3rd inanimate'. This places the consonant in intervocalic position where fortis consonants are voiceless and somewhat longer and lenis consonants are voiced and shorter. In this position *b* and *d* are pronounced as voiced fricatives, and *g* is a voiced stop. In utterance-initial position the lenis consonants tend to devoice and resemble their fortis counterparts. The degree of devoicing varies from speaker to speaker. As noted above, fortis stops are rare in word-initial positions (see section 3.1.2).

The affricates *c* and *c̓* are aspirated in utterance-final position. They do not have lenis counterparts.

In other languages of the Southern Zapotec group, the lenis-fortis distinction is much easier to hear. For instance, Marlett and Ward 1988 report that in Quioquitani Zapotec (a language closely related to QZ) the lenis-fortis consonants are clearly voiced and voiceless in the onset. A syllable-final consonant is easily identified as lenis or fortis by the length of the preceding vowel. I have heard Quioquitani Zapotec spoken and noticed that this vowel length is much clearer than in QZ. The subtler distinction between lenis and fortis consonants in QZ, and the fact that no two words in QZ are distinguished from each other only by a lenis-fortis distinction, leads one to believe that the

lenis-fortis contrast carries a smaller functional load in QZ than in other Zapotec languages.

Other Zapotec languages have fortis-lenis pairs for nasals and liquids (Butler 1980, Marlett and Pickett 1987, Nellis and Hollenbach 1980, Nellis and Nellis 1983, Stubblefield and Stubblefield 1991). Even in Mixtepec Zapotec, which is probably the Zapotec variant most closely related to QZ, Reeck has found fortis-lenis pairs for nasals and liquids (Reeck 1974). However, this distinction does not exist in QZ. The length of vowels preceding final nasals and liquids in QZ indicate that these consonants pattern as lenis.

3.1.4 Phoneme *b*

The consonant *b* acts more as a fricative than as a stop. In most environments it is pronounced [β]. It is pronounced [b] only when following *m* in a branching onset, as in *mbag*^{1} 'small iguana'. It is pronounced [ɸ] in utterance-final position and in a branching onset before a fortis consonant, as in *bc̱u'š*^{3} 'tomato' [ɸc̱u'uš^{3}]. When the possessive prefix[5] *š-* is added, as in [šaβ'c̱u'uš^{3}] 'tomato of', the allophone [β] occurs since it is now in the coda. Where *b* occurs word-initially in a branching onset before a voiced consonant, it is preceded by a rounded vowel-sound, as in *bza'*^{2} 'bean' [°β'za'a^{2}]. *b* is not devoiced, as are *d* and *g*, following the possessive prefix *š-*, as seen in [š-βič^{2}] 'cat of'.

3.2 Nasals

The consonant *n* is velar before a velar in a coda, as in the word *škil'jink* 'cricket'. Where *n* occurs before the consonants *w*, *g*^{w}, or *k*^{w} in a branching onset, the lip-rounding spreads onto the *n* as well. The following examples have been found.

(27)	nwc̱eč^{2}	'iguana'
	ng^{w}la'z^{2}	'frog'
	ng^{w}læ'^{4}	'blind person'
	ng^{w}reg^{3}	'small lizard sp.'
	ng^{w}a'n^{4}	'medicinal plant sp.'
	ng^{w}a'n^{2}	'chili plant'
	nk^{w}æ't^{4}	'deaf person'
	ng^{w}zi'^{2}	'thunder'
	ng^{w}zan	'certain relatives'

[5]A noun prefixed by *š-* is possessed by someone or something. The possessor (noun or pronoun) follows the possessed word.

'nwṣider 'acorn woodpecker'
nwṣu^3 'grains that form on corn flowers'

The phonemes *n* and *m* are contrasted below.

(28) onset: mæz^4 'hornet' vs. næz^2 'path'
coda: da$^?$m^2 'large owl sp. with ears' vs. kba$^?$n^2 'weeding'

3.3 Liquids

Where *l* follows *t*, it has a voiceless allophone [ɬ]. This occurs only in three words.

(29) tla^3 'piece'
tlak^4 'tree sp.'
tlaz^2 'peach' (probably from Sp. *durazno*)

r is a voiceless trill in utterance-final position and in a branching onset before a fortis consonant. It is a voiced trill in a branching onset before a lenis consonant and a flap elsewhere.

(30) rner^2 'strainer' [r̆ner̆^{2}]
rsil^3 'early' [r̆sil]
ren^4 'blood' [r̆en^4]
w-ru$^?$^{4} 'COM-leave' [u'r̆u$^?$u^4]

The phonemes *l* and *r* are contrasted below.

(31) onset: lo$^?$^{4} 'corral' *vs.* ro$^?$ 'big'
coda: dol^4 'sin' *vs.* dor^3 'pine needle'

3.4 Semivowels

The semivowels *w* and *y* are pronounced as voiceless syllabic vowels in a branching onset before a fortis consonant. They are pronounced as the voiced vowels [u] and [i] respectively in branching onsets before lenis consonants. However, they still function as consonants, carrying no tone of their own. And when words beginning this way are hummed, they are hummed as one syllable. This is discussed further in section 6.5.

y is voiceless in utterance-final position. *w* is pronounced as a short [u] in utterance-final position. Elsewhere, they are pronounced [w] and [y].

(32)	wkit^4	'game'	[U'kit^4]
	y-ka^3	'POT-buy'	[I'ka^3]
	wna$^{?4}$	'woman'	[u'na:$^{?4}$]
	yẑe	'tomorrow'	[i'ẑe]
	mey^3	'mushroom'	[me^{i}y^3] ~ [me^{i}Y^3] (in utterance-final position)
	bæw^4	'cloud'	[βæ^{u4}]
	wi$^{?2}$	'dance'	[wi$^?$i^2]
	yu$^{?2}$	'bundle'	[yu$^?$u^2]

Semivowels following laryngealized vowels have an effect on the vowel quality. A laryngealized vowel in QZ is usually pronounced as a vowel broken by a glottal stop, as in [βa$^?$a^2] 'grave' and [βo$^?$o^3] 'coal'. However, in words where a laryngealized vowel is followed by *y* or *w*, the vowel is not re-articulated after the glottal stop. Instead, the glottal stop is followed by the semivowel which phonetically is almost syllabic, as shown in example 33.

(33)	kba$^?$y^4	[kβa$^?$i^4]	'broom'	mæ$^?$w^3	[mæ$^?$u^3]	'moon'
	g^{y}e$^?$y^4	[g^{y}e$^?$i^4]	'mountain'	g^{y}o$^?$w^2	[g^{y}o$^?$u^2]	'river'
	me^2'c̣u$^?$y^2	[me^2'c̣u$^?$i^2]	'small owl'	do$^?$w^4	[do$^?$u^4]	'corn bin'

That these words end in a consonant is clear in sentences where they are followed by the third inanimate pronoun, which takes the form *we* following a vowel (as in *be^4 we* 'It's an echo.') and *o^2* following a consonant. In all cases of [V$^?$i] and [V$^?$u] the form *o^2* follows, as it does when *y* or *w* follow a simple vowel.

(34) Examples:

[me^{i}y^3]	mey^3	'mushroom'	['me^{i3}'yo^2]	mey^3 o^2
[me$^?$i^2]	me$^?$y^2	'mole'	['me$^?$i^2'yo^2]	me$^?$y^2 o^2
[βæu^4]	bæw^4	'cloud'	['βæ^{u4}'wo^2]	bæw^4 o^2
[mæ$^?$u^3]	mæ$^?$w^3	'moon'	['mæ$^?$u^3'wo^2]	mæ$^?$w^3 o^2

3.5 Complex segments

Decisions to treat ambiguous sequences as one or two phonemes are based on two criteria. First, if these are treated as two phonemes, will it produce a cluster of three consonants? All unambiguous clusters of three consonants in QZ begin with *n*. I have chosen an analysis which does not produce any clusters of three consonants beginning with a phoneme other than *n*.

The following segments are treated as single phonemes on the basis of this criterion: *k^y*, *k^w*, *g^y*, *g^w*, *c*, *č*, *c̣*, and *ǰ*. The list below shows examples of words which would have produced clusters of three consonants if these had

been treated as sequences of two phonemes. The example for g^w would have produced a cluster of four consonants.

(35) bk^{y}a$^{?2}$ 'necklace'
bk^{w}al^2 'corn husk'
lg^{y}e$^?$y^4 'market'
ng^{w}reg^3 'small lizard sp.'
bcaz^2 'gourd strainer'
mčiz^4 'squirrel'
bčụ$^?$ṣ^3 'tomato'
mǰin^3 'deer'

The second criterion is whether these segments act as one or two phonemes when preceded by the possessive prefix *ṣ-*. When this prefix is added to an unambiguous simple onset, it forms a cluster of two consonants.

(36) ṣ + CV(C) = ṣCV(C)
example: ṣ + bič^2 'cat' = ṣbič^2

However, when the possessive prefix is added to an unambiguous consonant cluster, the vowel *a*, with a low tone, is inserted between *ṣ-* and the consonant cluster. (Some speakers insert the vowel *e* instead.)

(37) ṣ + CCV(C) = ṣaC'CV(C)
example: ṣ + bdu$^{?2}$ 'banana' = ṣab^4'du$^{?2}$

The examples below show the phonemes k^y, k^w, g^y, g^w, and *c* preceded by the possessive prefix. Each clearly acts as a single phoneme.

(38) ṣ + k^{y}e-'wan 'mirror' = ṣk^{y}e'wan
ṣ + k^{w}art^2 'room' = ṣk^{w}art^2 (from Sp. *cuarto*)
ṣ + g^{y}e^4 'rock' = ṣk^{y}e^4
ṣ + g^{w}ay 'beast of burden' = ṣk^{w}ay (from Sp. *caballo* 'horse')[6]
ṣ + ca^4'k^{w}et^2 'basket' = ṣca^4'k^{w}et^2

For *čˇ*, *ǰ*, and *c̣ˇ*, however, this criterion cannot be used because QZ has a constraint against the sibilant clusters that would be produced. The conflict is resolved in the case of *čˇ* and *ǰ* by deleting these consonants following *ṣ-*. In the case of *c̣ˇ*, the conflict is resolved either by deleting *c̣ˇ* or by inserting the vowel *a*. However, only one example of this has been found to date.

[6]The voiced consonants g^y and g^w are devoiced following the possessive prefix *ṣ-* becoming k^y and k^w respectively.

(39) š + ǰil^4 'comal' = šil^4
š + čab^3 'skirt' = šab^3
š + čer^2 'scissors' = ša^4'čer^2 ~ šer^2 (from Sp. *tijeras*)

The following sequences are treated as consonant clusters because they do not occur in any clusters of three consonants and because they require an epenthetic vowel when preceded by the possessive prefix: *by, bw, my, ny, ly,* and *ry.*

(40) š + byæk^2 'jug' = šab^4'yæk^2
š + bwi^2 'guava' = šab^4'wi^2
š + mya$^?$k^4 'raven' = šam^4'ya$^?$k^4
š + nyeb^2 'snow' = šan^4'yeb^2 (from Sp. *nieve*)
š + lyu^4 'land' = šal^4'yu^4
š + ryent^2 'mescal' = šar^4'yent^2 (from Sp. *aguardiente* 'rum')

4 Vowels

There are six vowels in QZ. All six vowels exist in simple and laryngealized forms.

4.1 Contrasts

The six simple vowels are contrasted below.

(41)	a	ma^4'ba^4	'chipmunk'	g^{y}a	'above'
	e	me^4	'aphid'	g^{y}e^4	'rock'
	æ	mæ^4	'crab'	g^{y}æt^4	'tortilla'
	i	mig^3	'monkey'	—	
	o	—		g^{y}o^2	'rain'
	u	muš	'Aunt (title)'	g^{y}ut^4	'squash'

Laryngealized vowels are pronounced with a clear glottal stop between two equal vowels except when followed by a semivowel or *n* (see sections 3.4 and 4.3, respectively) or when they occur with a low tone *(4)* in an open syllable, as discussed in section 4.3. Simple and laryngealized vowels are contrasted below.

(42)	Simple		Laryngealized	
	ṣla^{4}	'yard'	ṣla^{ʔ1}	'fever'
	meǰ^{4}	'seed'	meʔǰ^{2}	'mountain lion'
	gʸæl^{2}	'corn plant'	gʸæʔl^{2}	'night'
	gič^{4}	'grinding stone'	giʔč^{4}	'paper'
	dob^{3}	'maguey'	doʔb^{2}	'feather'
	yu^{4}	'dirt'	yuʔ^{4}	'house'

4.2 Distributional restrictions

Both simple and laryngealized vowels occur only singly and never in clusters.

The vowels *i* and *iʔ* do not occur before *y*, and *u* and *uʔ* do not occur before *w*.

The vowels *æ* and *æʔ* have a somewhat limited distribution. They never follow *k, g, č, ǰ,* or *ṣ;* nor precede *p, b, č, ç, ǰ, ṣ, ẓ,* or *y*. However, they are very common in other environments. I have no explanation to offer for these distributional facts.

4.3 Variant forms of vowels

In a closed syllable a simple vowel is slightly shorter before a fortis consonant than it is before a lenis consonant or in an open syllable. However, I am unable to hear this distinction until the words are hummed (see section 3.1.3).

Before *n*, a laryngealized vowel is pronounced [Vʔṇ].That is, the glottal stop is followed by a syllabic *n*, and the vowel is not repeated. This is seen in the word *čiʔn*^{4} 'thirteen', which is pronounced [čiʔṇ^{4}], not [čiʔiṇ^{4}].

A laryngealized vowel with a low tone *(*^{4}*)* is pronounced [V:ʔ] in an open syllable. That is, the vowel is lengthened before the glottal stop and is not re-articulated. Utterance-finally the glottal stop is followed by an aspirated release.

(43)	yuʔ^{2}	'bundle'	[yuʔu^{2}]
	yuʔ^{4}	'house'	[yu:ʔ^{h4}] ~ [yu:ʔ^{4}] (if not utterance-final)

5 Prosodies

5.1 Stress

The vast majority of QZ morphemes are monosyllabic. Most of the two-syllable words we have recorded are known to be either compounds or Spanish loanwords. It is possible that the remainder are also. When two-syllable words occur, the stress is on the second syllable, as in *ca^{4}'k^{w}et^{2}* 'basket'. The exception to this rule is the word *'nwšider* 'acorn woodpecker', where stress falls on the first syllable. It is possible that, in fact, this is a one-syllable word, *nwšidr*. Such an analysis would, however, give us a new syllable type, CCCVCC, and a new consonant cluster, *dr*. It is also possible that this word is onomatopoeic, reflecting the call of the acorn woodpecker, which has no regard for QZ stress rules.

5.2 Tones

All four tones are contrastive in words with simple vowels which are either open or end with a lenis consonant.

(44)	V^{1} *vs.* V^{2}	niw^{1}	'sour'	niw^{2}	'maggot'
	V^{1} *vs.* V^{3}	bid^{1}	'scab'	bid^{3}	'closed'
	V^{1} *vs.* V^{4}	bæg^{1}	'comb'	bæg^{4}	'pole'
	V^{2} *vs.* V^{3}	g^{y}o^{2}	'rain'	g^{y}o^{3}	'lime'
	V^{2} *vs.* V^{4}	g^{y}æl^{2}	'corn plant'	g^{y}æl^{4}	'sandal'
	V^{3} *vs.* V^{4}	g^{y}æl^{3}	'grass'	g^{y}æl^{4}	'sandal'

High tone *(²)* and low tone *(⁴)* show no distributional restrictions and contrast with each other in many pairs. The low-rising tone *(³)* is found in all environments except on a simple vowel before a fortis consonant.

The high-rising tone *(¹)* is by far the least common. It occurs only on simple vowels in open syllables or simple vowels followed by a lenis consonant.

6 Consonant clusters

QZ has many consonant clusters, especially in the onset.

6.1 Syllable patterns

QZ syllables can be open or closed. Syllable onsets can include up to three consonants. Codas rarely have a cluster of two consonants.

(45) **Syllable patterns**

open:	V	u^4	'COM-eat'
	CV	gu^4	'potato'
	CCV	bza$^{?2}$	'bean'
	CCCV	nwṣu^3	'grains that form on corn flowers'
closed:	VC	iz^2	'year'
	CVC	yag^2	'tree'
	CCVC	bẓil^4	'spark'
	CVCC	ku^{11}tens^3	'sack'
	CCVCC	mtilt^3	*'jícama'* (snow potato)
	CCCVC	ngba$^?$n^2	'thief'

All of these patterns can occur with either simple or laryngealized vowels.

6.2 Rare patterns

The VC and V patterns are rare in native QZ words, to my knowledge being found only in *iz*^{2} 'year' and certain verbs in the completive aspect. The roots of these verbs all start with *u, u?, o,* or *o?*. When the completive aspect marker *w-* is added to these roots, it is not pronounced[7]. So the completive form of the verb *u*^{4} 'eat' is pronounced [u^4], not [wu^4].

Clusters of three consonants (in CCCV and CCCVC syllables) are not common. They have been observed in eleven words, each beginning with *n.* These words are listed in section 6.6.

Syllables ending in consonant clusters (CVCC and CCVCC) are also uncommon. These are discussed in section 6.7.

6.3 Two-consonant clusters in the onset

Table 1 shows all the clusters of two consonants found in the onsets of QZ words. Table 2 gives examples of those clusters. In Table 1 the first consonant in the cluster is shown in the vertical column, while the second consonant is listed across the top and bottom of the chart. Clusters marked "N" occur in simple, free nouns. In clusters marked "P" the initial *ṣ́* is always the possessive prefix *ṣ́-*. In clusters marked "A" the initial consonant is an aspect marker before a consonant-initial verb root. Clusters marked "L" occur only in Spanish loanwords. Clusters that occur on other kinds of words are marked "O".

[7]Some QZ speakers pronounce the *w* before *o* and *o?*. See section 3.1.2.

It is quite possible that some of the clusters marked "N" consist of what historically were two separate morphemes now reduced to a single word. And some clusters marked "O" historically consisted of aspect markers attached to roots other than verbs which have now become distinct words. Such is the nature of QZ.

Table 1: Clusters of two consonants in onsets

	p	t	k	kʸ	kʷ	b	d	g	gʸ	gʷ	c	č	ç	j	s	š	z	ž	m	n	l	r	y	w
p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	-	L
t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	-	N	L	-	-
k	-	-	-	-	-	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	-	-
kʷ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N	-	-	-
b	-	N	N	N	N	-	N	-	-	-	N	N	N	N	N	N	N	N	-	N	N	N	N	N
d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	-
g	-	-	-	-	-	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	A	A
gʷ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	O	-	-	O	-
f	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L
s	-	O	A	A	L	A	-	-	-	-	-	A	-	-	-	-	-	-	-	A	A	A	A	A
š	O	N	N	P	O	P	-	-	-	-	P	-	-	-	N	-	-	-	P	O	N	-	O	N
m	-	N	N	-	-	N	N	N	N	-	N	N	N	N	N	N	N	N	-	-	N	N	N	-
n	-	O	A	A	N	-	N	N	N	N	A	A	A	O	A	A	N	O	-	-	O	A	N	A
l	-	-	-	-	-	N	-	-	N	-	-	-	-	-	-	N	N	-	L	N	-	-	N	-
r	-	A	A	A	-	A	A	A	A	-	A	A	A	A	O	A	O	A	L	A	A	-	A	A
y	-	A	A	A	-	N	N	A	A	-	A	A	A	A	A	N	N	O	-	A	N	N	-	-
w	-	A	N	A	-	-	A	A	A	-	A	O	A	A	A	A	O	A	-	N	A	A	A	-
	p	t	k	kʸ	kʷ	b	d	g	gʸ	gʷ	c	č	ç	j	s	š	z	ž	m	n	l	r	y	w

There are many gaps in Table 1. The following paragraphs discuss some of these gaps.

There are no consonant clusters beginning with *kʸ, d, gʸ, c, č, ç, j, z,* or *ž*.

Note that the cluster *wb* does not occur. When the completive aspect marker *w-* is attached to a verb root beginning with *b*, a metathesis occurs producing a cluster of *bw*, as in *bwijˀ²*, the completive form of the verb root *bijˀ²* 'dry'.

Where *n* occurs before *b*, as in the stative marker *n-* attached to a root beginning with *b*, the *n* becomes *m*, as in *m-banˀ¹* 'ST-live'. Thus, no *nb* consonant clusters exist. However, *n* does not assimilate before *k* or *g* syllable-initially, as seen in *nkalˀ¹* 'dark' and *ngupˀ⁴* 'armadillo'.

When the possessive prefix *š-* is placed before a noun beginning with *r*, the *r* is deleted. No *šr* cluster is produced. Thus, the possessed form of *renˀ⁴* 'blood' is *šenˀ⁴*, not *šrenˀ⁴*.

A number of the holes in this chart can be accounted for by the sibilant cluster constraint mentioned in section 3.5. *č, ǯ, ǰ,* and *ž̌* are deleted following *š̌*. The consonant *z* is devoiced following *š̌*.

The following clusters, *sc, sč, sǰ, sš̌, sz,* and *sž̌,* are also absent. *c* and *z* are deleted following *s*. The underlying clusters *sǯ, sǰ, sš̌,* and *sž̌* all surface as *š̌*.

Voiced stops, except for *b*, are devoiced after *š̌-*, as in *š̌* + *g^{y}e^{4}* 'rock' becoming *š̌k^{y}e^{4}*. The phoneme *b* remains a voiced fricative, as in *š̌-bíč^{2}* 'POS-cat' [šßič^{2}].

Certain clusters which could be treated as sequences of three consonants are treated here as sequences of two with an intrusive stop in the phonetic representation. For example, where *m* occurs before *ž̌, l,* or *r,* a [b] is automatically inserted between them.

(46) mž̌i^{ʔ}z^{2} 'coati' [m'bž̌i^{ʔ}is^{2}]
mlag^{3} 'butterfly' [m'blak^{3}]
mre^{4} 'ant' [m'bře^{4}]

m occurs before the following consonants without a [b] being inserted: *t, k, b, d, g, g^{y}, c, č, ǯ, ǰ, s, š̌, z,* and *y*.

Also, where *n* occurs before *ž̌,* a [d] is automatically inserted, as in *nž̌o^{ʔ2}* 'big', pronounced [n'dž̌o^{ʔ}o^{2}]. (If this were analyzed as *ňjo^{ʔ2},* it would be the only word we've found where *ǰ* precedes a vowel other than *e* or *i*.) A *d* is also inserted between *n* and *r* where they occur contiguously across morpheme boundaries, as in *men^{1} ro* 'that person' [men^{1} dřo].

Note in particular the many clusters of *b* followed by obstruents. *b* is the only stop which does this. It also is the only stop that occurs as the second member of clusters beginning with *k* and *g*.

Table 2: Examples of two-consonant clusters in the onset

pr	prob	'poor' (from regional Sp. *probe*)
pw	pwert^{2}	'port' (from Sp. *puerto*)
tm	tmaž̌	'Thomas' (from Sp. *Tomás*)
tl	tlak^{4}	'tree sp.'
tr	tren	'train' (from Sp. *tren*)
kb	kba^{4}	'vapor'

kl	klas^{2}	'type' (from Sp. *clase*)
kr	krus	'cross' (from Sp. *cruz*)
$k^{w}l$	$k^{w}liž$	'mustard'
bt	bto$^{?}$s^{3}	'aqueduct'
bk	bkun^{3}	'kind of tortilla'
bk^{y}	$bk^{y}a^{?2}$	'necklace'
bk^{w}	$bk^{w}al^{2}$	'corn husk' (only example found to date)
bd	bdu$^{?2}$	'banana'
bc	bcaz^{2}	'gourd strainer'
bč	bči^{4}	'fruit of cactus sp.'
bč̣	bč̣u$^{?}$š^{3}	'tomato'
bǰ	bǰik^{2}	'cup on pole to cut fruit' (only example found to date)
bs	bsu$^{?3}$	'adobe'
bš	bšit^{4}	'ditch'
bz	bza$^{?2}$	'bean'
bẓ̌	bẓ̌il^{4}	'spark'
bn	bni$^{?}$l^{3}	'sunflower'
bl	blu$^{?2}$	'cave'
br	brun^{3}	'prickly pear fruit'
by	bya$^{?3}$	'prickly pear cactus'
bw	bwi^{2}	'guava'
dy	dyuẓ̌	'hello' (from Sp. *adiós*)
gb	gbiz^{4}	'day'
gr	gro$^{?}$l	'half'
gw	g-wi$^{?2}$	'POT-see'[8]
gy	g-ya^{4}	'POT-go'
$g^{w}z$	$g^{w}ze^{?}y$	'male'
$g^{w}n$	$g^{w}na^{?4}$	'female'
$g^{w}y$	$g^{w}yu^{?}$	'one hundred'
fw	fwer^{2}	'outside' (from Sp. *afuera*)
st	s-te	'again'

[8]Clusters of *gw* and *gy* are phonetically identical to the phonemes g^{w} and g^{y} respectively but are treated as consonant clusters here because they occur across morpheme boundaries.

sk	s-ka$^{?4}$	'FUT-write'
sk^{y}	s-k^{y}e^{3}	'FUT-roast'
sk^{w}	sk^{w}el	'school' (from Sp. *escuela*)
sb	s-ba$^{?}$n^{4}	'FUT-rob'
sč	s-čil^{2}	'FUT-untie'
sn	s-ni$^{?4}$	'FUT-speak'
sl	s-la$^{?4}$	'FUT-do'
sr	s-ru$^{?4}$	'FUT-leave'
sy	s-ya^{4}	'PRG-go'
sw	s-wi$^{?2}$	'FUT-see'
šp	špit	'nose of'
št	što$^{?}$	'head of'
šk	škil'jink	'cricket'
šk^{y}	š-k^{y}æt^{4}	'tortilla of'
šk^{w}	šk^{w}en	'finger of' (only example found to date)
šb	š-bay^{3}	'shawl of'
šc	š-ca^{4}'k^{w}et^{2}	'basket of'
šs	ššæ$^{?4}$	'dinner'
šm	š-mej^{4}	'seed of'
šn	šna$^{?}$	'mother of'
šl	šla$^{?3}$	'fever'
šy	šyag	'grandchild of'
šw	šwak^{2}	'cockroach'
mt	mte$^{?}$d^{3}	'bee fly'
mk	mku$^{?}$j^{3}	'bee hive'
mb	mbud^{2}	'funnel'
md	mdun^{4}	'dust devil'
mg	mgin^{2}	'bird'
mg^{y}	mg^{y}e$^{?}$y^{2}	'man'
mc	mca$^{?3}$	'casserole dish'
mč	mčiz^{4}	'squirrel'
mč	mčunk^{4}	'tree trunk' (only example found to date)
mj	mjin^{3}	'deer' (only example found to date)
ms	msi$^{?4}$	'hawk' (only example found to date)
mš	mšog^{4}	'rhinoceros beetle'
mz	mzæd^{3}	'machete'
mž	mžig^{3}	'pine cone'
ml	mlenč^{3}	'mosquito'
mr	mre^{4}	'ant'
my	mya$^{?}$k^{4}	'raven'

nt	ntos^{4}	'evil'
nk	n-ka$^{\text{ʔ}4}$	'UNR-write'
nk$^{\text{ʸ}}$	n-k$^{\text{ʸ}}$e^{3}	'UNR-roast'
nk$^{\text{ʷ}}$	nk$^{\text{ʷ}}$æ$^{\text{ʔ}}$t^{4}	'deaf person'
nd	ndal^{1}	'many'
ng	ngup^{4}	'armadillo'
ng$^{\text{ʸ}}$	ng$^{\text{ʸ}}$ed^{3}	'chicken'
ng$^{\text{ʷ}}$	ng$^{\text{ʷ}}$a$^{\text{ʔ}}$n^{2}	'chili plant'
nc	n-cæ$^{\text{ʔ}4}$	'UNR-close'
nč	n-čil^{2}	'UNR-untie'
nc̣	n-c̣ug^{4}	'UNR-cut'
nǰ	nǰi$^{\text{ʔ}}$b^{3}	'smooth'
ns	n-se$^{\text{ʔ}}$d^{4}	'UNR-learn'
nš	n-šob^{3}	'UNR-set'
nz	nza$^{\text{ʔ}}$p^{4}	'girl'
nž	nẓ̌en^{2}	'wide'
nl	nlo$^{\text{ʔ}4}$	'red'
ny	nya^{3}	'hand of'
nw	n-wi$^{\text{ʔ}2}$	'UNR-see' (only example found to date)
lb	lbey^{3}	'spider web'
lg$^{\text{ʸ}}$	lg$^{\text{ʸ}}$e$^{\text{ʔ}}$y^{4}	'market'
lš	lše$\check{c}^{2}$	'medicinal herb sp.' (only example found to date)
lz	lza$^{\text{ʔ}}$	'spouse'
lm	lmet^{2}	'glass bottle' (from Sp. *limeta*)
ln	lni^{4}	'fiesta' (only example found to date)
ly	lyu^{4}	'land, earth'
rt	r-to$^{\text{ʔ}4}$	'HAB-sell'
rk	r-ka^{3}	'HAB-buy'
rk$^{\text{ʸ}}$	r-k$^{\text{ʸ}}$e^{3}	'HAB-roast'
rb	r-ba$^{\text{ʔ}}$n^{4}	'HAB-rob'
rd	r-da$^{\text{ʔ}2}$	'HAB-crawl'
rg	r-ge$^{\text{ʔ}}$b^{2}	'HAB-scrub'
rg$^{\text{ʸ}}$	r-g$^{\text{ʸ}}$e$^{\text{ʔ}}$ǰ^{2}	'HAB-hug' (only example found to date)
rc	r-cæ$^{\text{ʔ}4}$	'HAB-close'
rč	r-čil^{2}	'HAB-untie'
rc̣	r-c̣ug^{4}	'HAB-cut'
rǰ	r-ǰe^{2}	'HAB-fear'
rs	rsil^{3}	'morning'
rš	r-šal^{3}	'HAB-open'
rz	rzæ$^{\text{ʔ}}$	'late'
rž	r-ẓ̌o$^{\text{ʔ}}$n^{2}	'HAB-run'

rm	rmed	'remedy' (from Sp. *remedio*)
rn	r-ni$^{?4}$	'HAB-speak'
rl	r-la$^{?4}$	'HAB-do'
ry	r-ye^{1}	'HAB-search for'
rw	r-wi$^{?2}$	'HAB-see'
yt	y-to$^{?4}$	'POT-sell'
yk	y-ka^{3}	'POT-buy'
yk^{y}	y-k^{y}e^{3}	'POT-roast'
yb	yba$^{?4}$	'sky'
yd	ydo$^{?4}$	'church building'
yg	y-ga$^{?}$s^{4}	'POT-blacken'
yg^{y}	y-g^{y}e$^{?}$j^{2}	'POT-hug' (only example found to date)
yc	y-cæ$^{?4}$	'POT-close'
yč	y-čil^{2}	'POT-untie'
yč̣	y-č̣ug^{4}	'POT-cut'
yǰ	y-ǰe^{2}	'POT-fear'
ys	y-se$^{?}$d^{4}	'POT-learn'
yš	yšu$^{?}$n^{4}	'Tlacolulita'
yz	yzæ$^{?4}$	'Tehuántepec'
yẓ̌	yẓ̌e	'tomorrow'
yn	y-ni$^{?4}$	'POT-speak'
yl	yla^{4}	'rust'
yr	yre$^{?4}$	'Quioquitani'
wt	w-to$^{?4}$	'COM-sell'
wk	wkit^{4}	'game'
wk^{y}	w-k^{y}e^{3}	'COM-roast'
wd	w-de$^{?2}$	'COM-give'
wg	w-git^{4}	'COM-play'
wg^{y}	w-g^{y}e$^{?}$ǰ^{2}	'COM-hug' (only example found to date)
wc	w-cæ$^{?4}$	'COM-close'
wč	wče	'a moment ago'
wč̣	w-č̣ug^{4}	'COM-cut'
wǰ	w-ǰe^{2}	'COM-fear'
ws	w-se$^{?}$d^{4}	'COM-learn'
wš	w-šob^{3}	'COM-set'
wz	wzæ$^{?}$	'afternoon'
wẓ̌	w-ẓ̌o$^{?}$n^{2}	'COM-run'
wn	wna$^{?4}$	'woman'
wl	w-la$^{?4}$	'COM-do'
wr	w-ru$^{?4}$	'COM-leave'
wy	w-ya^{3}	'COM-dance'

6.4 Sonority slope in consonant clusters

Greenberg (1978:261) states, "There is a voiced center of the syllable consisting of the vowel and possible successive preceding and following voiced consonants but that voicing is normally confined to this nucleus, i.e., that voicing is not interrupted and resumed within the same syllable." He concludes (p. 270), "In relation to the peak of the syllable, combinations are favored in which sonants are closer to the peak than obstruents and in which voiced consonants are closer to the peak than unvoiced." Bell and Saka (1983:259) subsequently generalized this sonority constraint, stating, "It is well established that languages overwhelmingly prefer initial clusters with a rising slope of sonority." They rank sonority on a scale in which stops are the least sonorous, with sonority increasing through fricatives, nasals, laterals, and rhotics to semivowels, the most sonorous of the consonants. Clusters in which a sonorant consonant is followed by a less sonorant consonant are called "reversed clusters" and are said to be uncommon. Further, where reversed clusters do occur, "they nearly always occur in a given language only in addition to clusters with the segment classes in preferred order" (Bell and Saka 1983:259).

In QZ, however, we find that 97 of the 147 consonant clusters found in native QZ words are reversed clusters. This is 66% of the total. Of these, only 23 have a matching pair in the "preferred order."

It should be noted that in this paper, *b* is considered a stop. It could as easily be considered a fricative since it occurs in that form more often than as [b] (See section 3.1.4). If *b* were treated as a fricative, 104 of the 147 consonant clusters (71%) would be reversed. Of these, only 24 would have a matching pair in the "preferred order."

Many of the unusual consonant clusters in QZ can be explained by the QZ tendency toward monosyllabic words. This tendency is seen clearly in Spanish loanwords. Typically, only the stressed syllable of the Spanish word is retained. Only some of the consonants of the unstressed syllables remain. For example, the Spanish word *manzana* [man'sana] 'apple' was adopted into QZ as *mzan*.

Many words which are polysyllabic in other Zapotec languages have been reduced to one-syllable words in QZ by the same process, as seen in (47).

(47) Examples comparing Isthmus Zapotec words with QZ words[9]

Isthmus Zapotec		**QZ**
gu'na$^{?}$	'woman'	wna$^{?4}$
'mani 'wi$^{?}$ni$^{?}$	'bird'	mgin^{2}
la'ni	'fiesta'	lni^{4}

'mani is the Isthmus Zapotec word for animal. The QZ word for animal is *ma$^{?2}$*. One might propose that an abbreviated form of this occurs in many QZ words for animals and accounts for most of the reversed consonant clusters with initial *m*. A few of the many QZ animal words beginning with *m-* are given in (48).

(48) mčiz^{4} 'squirrel'
mæ$^{?}$l^{2} 'snake'
mg^{y}ez^{3} 'mosquito'
mlag^{3} 'butterfly'

Bell and Saka (1983:259) also state that "The most extreme class of reversed clusters are those which begin with a semivowel," and that these are "exceedingly rare." However, in QZ we find that 35 of the reversed clusters begin with semivowels. Many of these are verb roots or other word classes preceded by the aspect markers *y-* 'POT' and *w-* 'COM' (see section 6.5). Jaeger and Van Valin (1982) describe similar consonant clusters beginning with the semivowel *w* in Yatee Zapotec. In other Zapotec languages (for instance Isthmus Zapotec) these aspect markers sometimes appear as *gi-* 'POT' and *gu-* 'COM' and are full syllables in themselves (Pickett 1988). In QZ the potential aspect before a vowel-initial root is marked by *g-*. It seems likely that unstressed vowels were present in these two aspect markers in an earlier form of Zapotec and were lost through a process of desyllabification.

6.5 *y* and *w* before other consonants

The semivowels *y* and *w* frequently occur in word-initial positions before other consonants. Phonetically, *y* and *w* sound like unstressed vowels, [i] and [u], before a consonant. (They are sometimes voiceless; see section 3.4.) However, when native speakers hum these words, they hum them as only one syllable. Thus, the words *y-ǰe^{2}* 'POT-fear' and *w-ǰe^{2}* 'COM-fear' sound the same as *ǰe^{2}* 'day' when hummed. Also, only one tone can be assigned to such a word. For these reasons, I treat them as monosyllabic words. For example:

[9]Isthmus Zapotec examples, from Pickett 1988, have been written phonemically for ease of comparison.

(49) [i'ni:$^{?4}$] = y-ni$^{?4}$ 'POT-speak'
[u'ni:$^{?4}$] = w-ni$^{?4}$ 'COM-speak'

Words in which *y* and *w* precede other consonants and are not functioning as aspect markers are also hummed as one syllable. For example:

(50) [i'do:$^{?4}$] = ydo$^{?4}$ 'church'
[u'na:$^{?4}$] = wna$^{?4}$ 'woman'

When a cluster with an initial semivowel is preceded by the possessive prefix, *š-*, we might expect the epenthetic vowel *a* following *š-*. The expected sequences *ay* and *aw* do not occur, however; instead, *i* and *u* occur, respectively, as seen below.

(51) š + ydo$^{?4}$ 'church' = [ši^{4}'do:$^{?4}$]
š + wna$^{?4}$ 'woman' = [šu^{4}'na:$^{?4}$]

These possessed words are hummed as two syllables and a tone is assigned to each of the two syllables.[10] When these two words are pronounced excessively slowly, the epenthetic vowel *a* or *e* is sometimes pronounced.

(52) [šey^{4}'do:$^{?4}$] [šaw^{4}'na:$^{?4}$]

6.6 Three-consonant clusters

The following clusters of three consonants have been found in syllable onsets. There are only one or two words which have each of these consonant clusters. Notice that each cluster begins with the consonant *n*.

(53)	ngb	ngba$^{?}$n^{2}	'thief'
	ngb	ngbiz^{4}	'sun'
	ngz	ngze$^{?}$y	'mister'
	ng^{w}z	ng^{w}zan	'certain relatives'
	ng^{w}z	ng^{w}zi$^{?2}$	'thunder'
	ng^{w}l	ng^{w}la$^{?}$z^{2}	'frog'
	ng^{w}l	ng^{w}læ$^{?4}$	'blind person'
	ng^{w}r	ng^{w}reg^{3}	'small lizard'
	nwč	nwčeč^{2}	'iguana'
	nwš	'nwšider	'acorn woodpecker'
	nwš	nwšu^{3}	'grains that form on a corn flower'

[10]The tone of the epenthetic vowel is always low, as can be seen in the following example where the root is a high tone: *š + yla$^{?2}$* 'caterpillar' = [ši^{4}'la$^{?2}$]

It is likely that all of these words are the result of the tendency of QZ to reduce words to one syllable. Compare the three examples from QZ with Isthmus Zapotec in (54) (examples from Pickett 1988).

(54)	QZ		Isthmus Zapotec
	ngbiz^{4}	'sun'	gu'biǰa
	ng^{w}reg^{3}	'small lizard'	gu'ragu?
	nwc̣eč^{2}	'iguana'	gu'čači?

6.7 Final consonant clusters

The following consonant clusters have been found in syllable-final position. These consonant clusters are not very common. We have found only one or two examples of each. Not included are consonant clusters formed when the negative suffix *-d* (with allomorph *-t*) follows a verb.

(55)	nt	ryent^{2}	*'mescal'* (from Sp. *aguardiente* 'rum')
	nk	šk̦il'ǰink	'cricket'
	nc̣	mlenc̣^{3}	'mosquito'
	ns	ku'ˈtens^{3}	'sack'
	lt	mtilt^{3}	*'jícama'* (snow potato)
	ys	ge?ys^{4}	'sleep' (compounding form)

ABBREVIATIONS

COM	completive aspect
FUT	future aspect
HAB	habitual aspect
IMP	imperative aspect
POS	possessive
POT	potential aspect
PRG	progressive aspect
QZ	Quiegolani Zapotec
sp.	species
Sp.	Spanish
ST	stative aspect
UNR	unreal aspect

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ROLE AND REFERENCE GRAMMAR

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1 Introduction
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1 Introduction*

Role and Reference Grammar [RRG] (Van Valin 1993a) may be termed a "structural-functionalist theory of grammar"; this locates it on a range of perspectives from extreme formalist at one end to radical functionalist at the other. RRG falls between these two extremes, differing markedly from each. In contrast to the extreme formalist view, RRG views language as a system of communicative social action, and consequently, analyzing the communicative functions of morphosyntactic structures has a vital role in grammatical description and theory from this perspective. Language is a system, and grammar is a system in the traditional structuralist sense; what differentiates the RRG conception of grammar from the standard formalist one is the view that grammatical structure can only be understood and explained with reference to its semantic and communicative functions. Syntax is not autonomous; rather it is viewed as relatively motivated by semantic and pragmatic factors. In terms of the abstract paradigmatic and syntagmatic relations that define a structural system, RRG deals not only with relations of cooccurrence and combination in strictly formal terms but also with semantic and pragmatic cooccurrence and combinatory relations. Hence RRG may be properly designated as a structural-functionalist theory, rather than purely formalist or purely functionalist.

2 Historical background

RRG grew out of an attempt to answer two fundamental questions:

i) what would linguistic theory look like if it were based on the analysis of Lakhota, Tagalog and Dyirbal, rather than on the analysis of English?, and

ii) how can the interaction of syntax, semantics and pragmatics in different grammatical systems best be captured and explained?

These questions reflect issues that were prominent in the mid-1970's in some strands of American linguistics. Dixon's grammar of Dyirbal and Schachter & Otanes' grammar of Tagalog had been published in 1972, and the implications of these languages for linguistic theories were just being recognized. Furthermore, the Prague School and Hallidayan ideas regarding the role of discourse-pragmatics in grammar were being explored from a number of different perspectives. Many of the typological issues, e.g. the universality of the notion of "subject", and theoretical issues, e.g. the relation between "subject" and "topic" in grammatical systems, were central in the initial conceptualization of RRG, and this is reflected in the early work on the theory (Foley & Van Valin 1977, Van Valin 1977a,b, 1980, 1981, Van Valin & Foley 1980).

The theory from which RRG is most directly descended is Fillmore's (1968) Case Grammar. As in Fillmore's model, there is a semantic representation employing semantic case roles which is mapped into the syntactic surface structure, without any intervening level of syntactic representation. The details of the mapping differ substantially, however, and one prime difference is that in RRG discourse-pragmatic factors may play a role in the mapping. The RRG theory of clause structure follows the insight of Fillmore's division of the clause into "modality" and "proposition" by treating predicates, arguments and their modifiers distinctly from grammatical categories such as tense, aspect, modality and mood. Finally, RRG, like Fillmore, does not assume grammatical relations to be universal.

3 Central concepts of the theory

3.1 Clause structure

RRG rejects the standard formats for representing clause structure (grammatical relations, X-bar syntax), because they are not universal and hence necessarily impose aspects of structure on at least some languages where it is not appropriate. The RRG conception of clause structure (originally proposed in Foley & Van Valin 1984 and further refined in Van Valin 1993a), the LAYERED STRUCTURE OF THE CLAUSE [LSC], is made up of the NUCLEUS, which contains the predicate(s), the CORE, which contains the nucleus plus the arguments of the predicate(s), and the PERIPHERY, which contains adjunct temporal and locative modifiers of the core. These aspects of the LSC are universal; in addition, some languages have a PRE-CORE SLOT [PCS], which is the position of WH-words in languages like English and Icelandic, and a LEFT-DETACHED POSITION, [LDP], which is the position of the pre-clausal element in a left-dislocation construction. Each of the major layers (nucleus, core, clause) is modified by one or more OPERATORS, which include grammatical categories such as tense, aspect, modality and evidentiality. In the formal representation of the LSC (proposed in Johnson 1987), operators are represented in a distinct projection of the clause from the predicates and arguments. This is presented in Figure 1

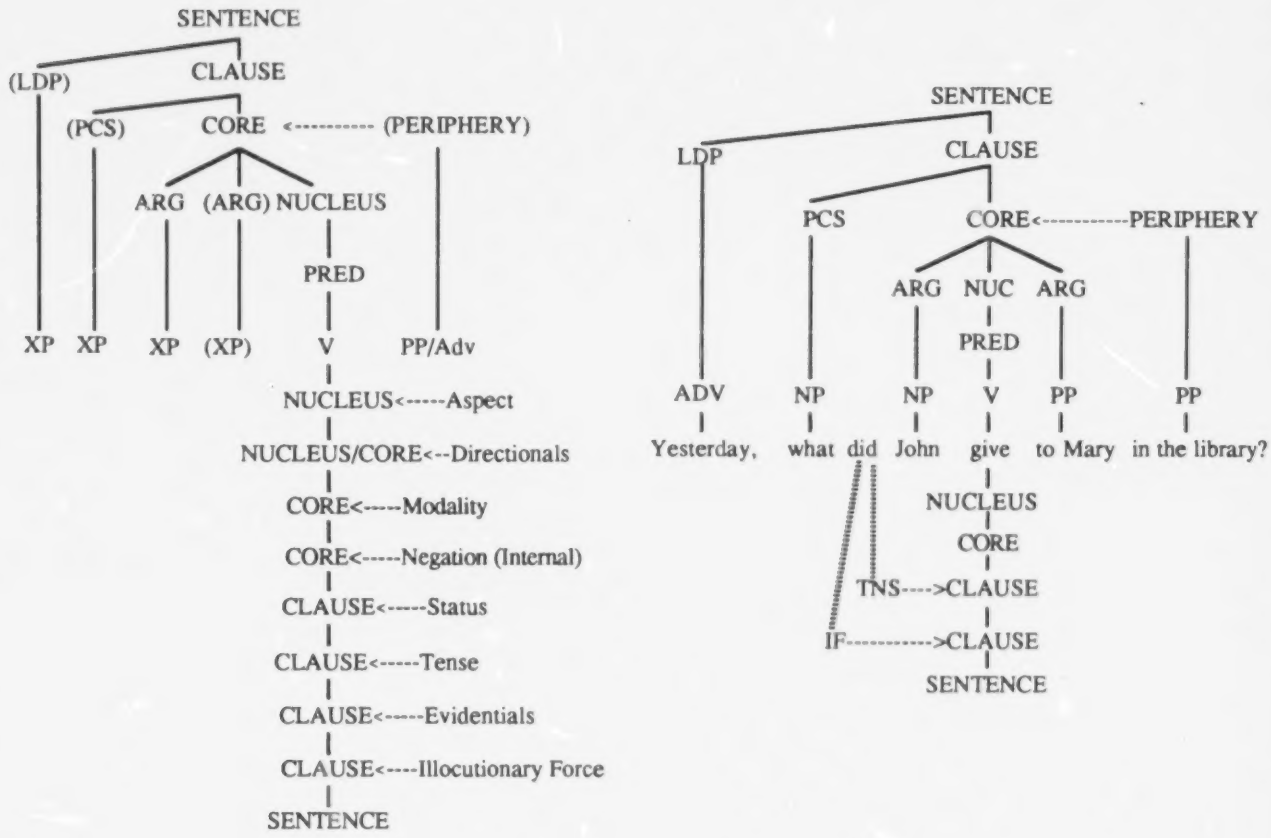

Figure 1

Representations such as these should be viewed as *constructional templates*; the inventory of these templates in a language constitutes an important component of its grammar. The LSC applies equally to fixed word-order and free word-order languages, to head-marking and dependent-marking languages, and to languages with and without grammatical relations.[1]

The three central components of the LSC also turn out to be the three fundamental building blocks of complex sentences in human language. The unmarked pattern for the construction of complex sentences involves combining nuclei with nuclei, cores with cores, or clauses with clauses. These are called levels of JUNCTURE in RRG, i.e. nuclear juncture, core juncture and clausal juncture. Examples of nuclear, core and clausal juncture from English are given in (1).[2]

(1) a. Fred pushed the door open. [two nuclei, *push* and *open*, in a single core]
b. Fred persuaded Bill to open the door. [two cores, *Fred persuaded Bill* and *Bill open the door*, in a single clause]
c. Fred talked to Mary, and she agreed with his suggestion. [two clauses in a single sentence]

Of equal importance in the RRG theory of complex sentences is the set of possible syntactic and semantic relations between the units in a juncture.[3] The syntactic relations between units are called NEXUS relations in RRG. Traditionally, only two basic nexus relations are recognized, coordination and subordination, but RRG, following Olson's (1981) analysis of clause linkage in Barai (a Papuan language), posits three nexus types: coordination, subordination, and COSUBORDINATION, which is essentially dependent coordination. Subordination and cosubordination are illustrated in (2) with examples of clausal juncture from English; (1c) is an example of clausal coordination.

(2) a. Max called Sue, because he was going to be late for the party. [Subordination]
b. Having called Sue, Max left for the party. [Cosubordination]

The three levels of juncture combine with the three nexus types to generate nine possible complex sentence types. Not all of them are instantiated in every language, and the types found in a language may be realized by more than one formal construction type. The nine juncture-nexus types may be ordered into a hierarchy in terms of the tightness of the syntactic link between the units (see the hierarchy in Figure 2 in section 3.2).

3.2 Semantic structure

The heart of the RRG approach is the system of lexical representation and semantic roles. The system of lexical representation is based on the scheme for lexical decomposition proposed in Dowty (1979), which is in turn based on Vendler's (1967) classification of verbs into states, activities, achievements and accomplishments. Examples of each class and their formal representation are given in (3).

(3) a.	State:	The lamp is broken.	**broken′** (the lamp)
b.	Achievement:	The lamp broke.	BECOME **broken′** (the lamp)
c.	Accomplishment:	Bill broke the lamp.	[**do′** (Bill, Ø)] CAUSE [BECOME **broken′** (the lamp)]
d.	Activity:	The lamp is shaking.	**do′** (the lamp, [**shake′** (the lamp)])

A crucial component of this system is a set of syntactic and semantic tests for determining the class membership of a verb in a particular sentence, since the class of the verb determines its lexical representation or LOGICAL STRUCTURE [LS] (see Van Valin 1993a:35). Examination of the verbal systems of a number of languages led to the

conclusion that this set of distinctions is one of the fundamental organizing principles of verbal systems in human language.[4]

The RRG theory of semantic roles is rather different from that of other theories, in that it posits two types or tiers of semantic roles. The first are specific thematic relations, the traditional (since Fillmore and Gruber 1965) notions of agent, theme, patient, experiencer, etc. The second are generalized semantic roles called SEMANTIC MACROROLES; they were introduced in Van Valin (1977b) and have no analog in other theories. Following the ideas of Gruber (1965) and Jackendoff (1976), RRG derives thematic relations from argument positions in LSs such as those in (3); this is summarized in Figure 4 in section 3.4. Because the LS of a verb is determined by syntactic and semantic tests which make no reference to thematic relations, the assignment of thematic relations to a verb is independently motivated in RRG.

The second type of semantic role plays a crucial role in the theory; macroroles act as the primary interface between the LS and syntactic representations. There are only two macroroles, ACTOR and UNDERGOER, corresponding to the two primary arguments in a prototypical transitive relation. They are called "macroroles" because each subsumes a number of specific thematic relations; the relationship between the two tiers is captured in the Actor-Undergoer Hierarchy in (4).

(4) ACTOR UNDERGOER

<---

Agent Effector Experiencer Locative Theme Patient

['----->' = increasing markedness of realization of thematic relation as macrorole]

Given the LS of a verb, the most agent-like argument will be actor, the most patient-like undergoer, in the default case. Macroroles are not equivalent to grammatical relations; this is illustrated in (5).

(5) a. The boy [SUBJ, ACTOR] ate the sandwich [OBJ, UNDERGOER].
b. The sandwich [SUBJ, UNDERGOER] was eaten by the boy [ACTOR].
c. The girl [SUBJ, ACTOR] ran down the stairs.
d. The girl [SUBJ, UNDERGOER] got sick.

The exact role of thematic relations and macroroles in the mapping (or linking) between semantic and syntactic representations will be sketched in section 3.4 and summarized in Figure 4.

As mentioned in the previous section, an important component of the theory of

complex sentences is the semantic relations that obtain between units in a juncture. These include causality, psych-action, direct perception, cognition, propositional attitude, conditional, and varieties of temporal sequence. These may be ordered into a hierarchy in terms of whether the units in the juncture express facts of a single event, state or action or distinct events, states or actions. This semantic hierarchy interacts with the syntactic hierarchy of juncture-nexus types as follows: there is an iconic relation between the semantics and syntax of clause linkage, such that the tightness of the syntactic linkage directly reflects the semantic integration of the units in the linkage. This is expressed in the Interclausal Relations Hierarchy in Figure 2.

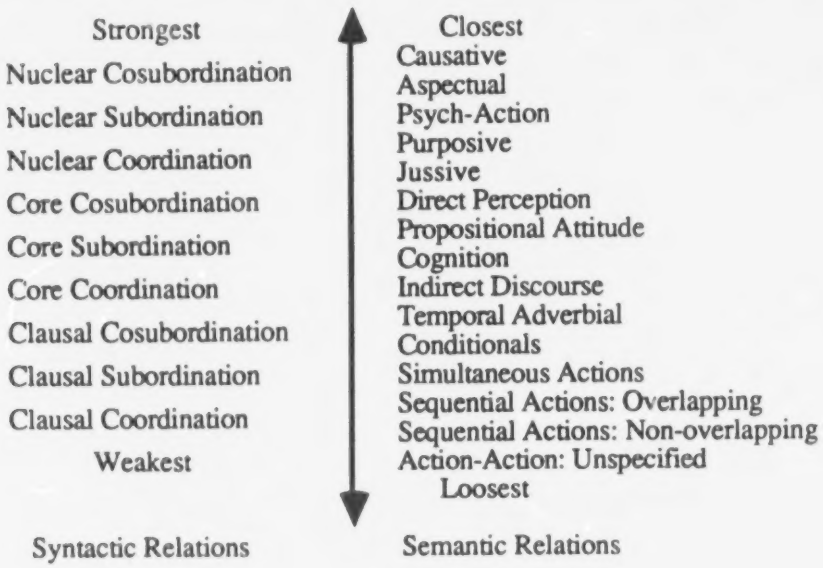

Figure 2

3.3 Focus structure

The issue of the distribution of information in clauses and sentences was not addressed in Foley & Van Valin (1984), and Van Valin (1993a) integrates Lambrecht's (1986, 1987, in press) theory of FOCUS STRUCTURE into RRG. Focus structure is the grammatical system which serves to indicate the scope of the assertion in an utterance in contrast to the pragmatic presupposition, and it is vital to the RRG analysis of many grammatical phenomena. The focus structure of an utterance is represented in a projection of the clause which is distinct from the operator and constituent projections; this is exemplified in Figure 3.

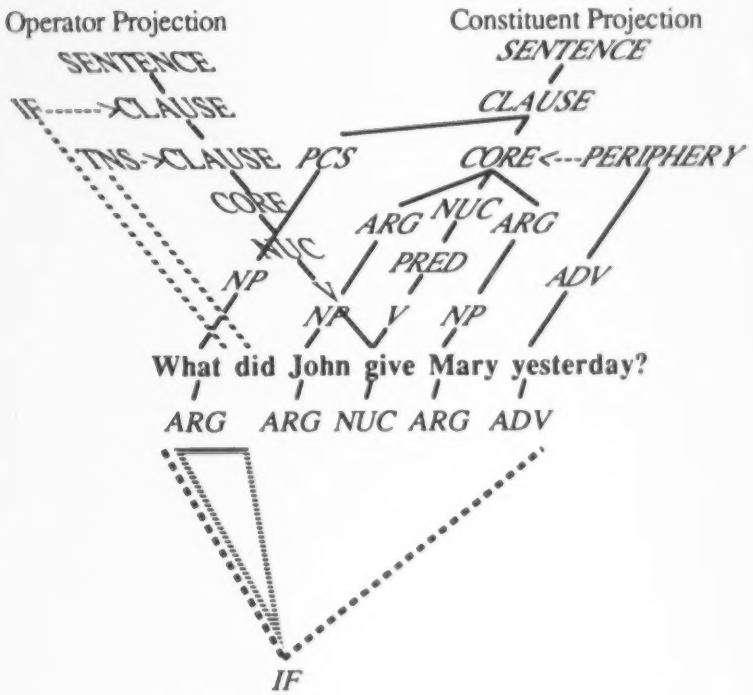

Figure 3

3.4 Grammatical relations and linking

In the earliest work on RRG it was argued that grammatical relations like subject and direct object are not universal and cannot be taken as the basis for adequate grammatical theories. In place of these notions, RRG employs the notion of syntactic pivot, which is a construction-specific relation and is defined as a restricted neutralization of semantic roles and pragmatic functions for syntactic purposes. The other arguments in a clause are characterized as direct or oblique core arguments; there is nothing in RRG corresponding to direct or indirect object.

The linking system relating semantic and syntactic representations is summarized in Figure 4. Syntactic functions like pivot and direct core argument (which are structurally instantiated in the LSC) represent the syntactic pole of the system, while LSs represent the

semantic pole. The linking between LSs and macroroles is universal, and cross-linguistic variation, e.g. accusative vs. ergative syntactic systems, is located in the mapping between macroroles and syntactic functions.

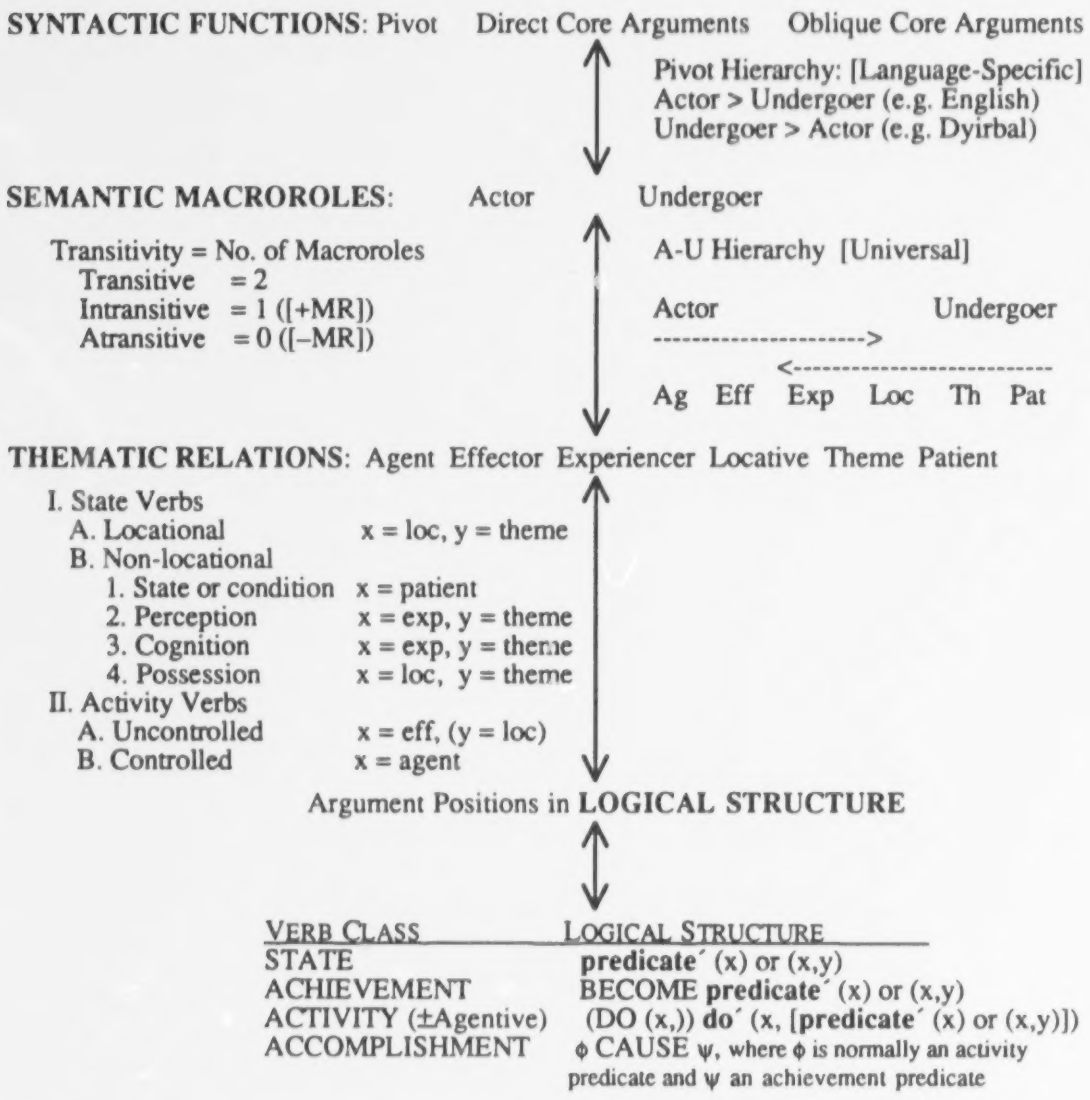
SYNTACTIC FUNCTIONS: Pivot Direct Core Arguments Oblique Core Arguments
Pivot Hierarchy: [Language-Specific]
Actor > Undergoer (e.g. English)
Undergoer > Actor (e.g. Dyirbal)
SEMANTIC MACROROLES: Actor Undergoer
Transitivity = No. of Macroroles
Transitive = 2
Intransitive = 1 ([+MR])
Atransitive = 0 ([–MR])
A-U Hierarchy [Universal]
Actor Undergoer
Ag Eff Exp Loc Th Pat
THEMATIC RELATIONS: Agent Effector Experiencer Locative Theme Patient
I. State Verbs
A. Locational x = loc, y = theme
B. Non-locational
1. State or condition x = patient
2. Perception x = exp, y = theme
3. Cognition x = exp, y = theme
4. Possession x = loc, y = theme
II. Activity Verbs
A. Uncontrolled x = eff, (y = loc)
B. Controlled x = agent
Argument Positions in LOGICAL STRUCTURE
VERB CLASS LOGICAL STRUCTURE
STATE predicate´ (x) or (x,y)
ACHIEVEMENT BECOME predicate´ (x) or (x,y)
ACTIVITY (±Agentive) (DO (x,)) do´ (x, [predicate´ (x) or (x,y)])
ACCOMPLISHMENT ϕ CAUSE ψ, where ϕ is normally an activity predicate and ψ an achievement predicate

Figure 4

One of the questions which RRG asks is, when there is an option as to which arguments can be linked to pivot, what factors can affect the choice? It turns out that the answer to this question has important typological ramifications, for some languages permit discourse-pragmatic factors to play a role, whereas others do not. This distinction is expressed in the RRG typology of "role-dominated" (no discourse-pragmatic influence on linking) vs. "reference-dominated" (possible discourse-pragmatic influence on linking) languages, and in the contrast between SEMANTIC PIVOTS vs. PRAGMATIC PIVOTS (which are found only in reference-dominated languages), two subtypes of syntactic pivot.

4 Some implications of RRG

RRG illustrates one possible answer to the questions stated at the beginning of section 2, and it shows that it is possible to have a rigorous, typologically-sensitive grammatical theory which takes semantics and pragmatics as central features. It has attempted to deal not only with the issues that have interested typologists and functionalists, e.g. universality of grammatical relations, but also with some of the leading questions raised by formal theories, e.g. extraction restrictions (subjacency). Recent work (Van Valin 1993a,b) has proposed a functional account of subjacency which relies crucially on interactions among the linking system, focus structure, and syntactic structure. In addition, RRG has been shown to provide a potentially explanatory framework for the study of language acquisition and child language (Van Valin 1991, in press, Rispoli 1991a,b).

NOTES

* This paper will appear in the *Instrumentarium* volume of the *Handbook of Pragmatics* to be published by the International Pragmatics Association. The conditions of the contract stipulated 2,000 words for the length of the article, and the paucity of argumentation, explanation and documentation are a function of this limit. See Van Valin (1993a) for a full exposition of the theory.

1 It is assumed that noun phrases and adpositional phrases have a comparable layered structure; see Van Valin (1993a), §1.7

2 While it is alien to the typological, universalist character of RRG to give examples only from English, the severe space constraints imposed on this article make this necessary as a space-saving strategy.

3 The semantic relations will be discussed in section 3.2 below.

4 For further development of this decompositional system, see Van Valin & Wilkins (1993), Wilkins & Van Valin (1993).

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THE BINDING PROPERTIES OF QUECHUA SUFFIXES *

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1 Introduction

This paper sketches an explicitly non-lexicalist application of grammatical theory to Huallaga (Huánuco) Quechua (henceforth HgQ). I hope to demonstrate the advantages of applying the binding theory to many suffixes that have previously been treated only as objects of the morphology. This is possible only if morphology and syntax are more intimately related than allowed under the lexicalist hypothesis.

Section 2 outlines some basic assumptions (categories, structures, Case assignment, θ-marking, etc.) Section 3 discusses inflection, proposing an analysis of SUBJECT MARKING ANOMALY phenomena. Section 4 argues that HgQ's complementizers are really its case-marking suffixes. Section 5 deals with the possessive suffixes, showing that in Agr-P they are "mildly" anaphoric; 5.3 argues that there is a null possessive suffix, *-ø* '12p'. Section 6 deals with switch reference, deriving a wide range of facts from some structural assumptions and then claiming that *-r* 'advss' is anaphoric and the possessive suffixes in Agr-S are pronominal. Section 7 discusses "infinitives," claiming that *-y* is anaphoric. Section 8 discusses various uses of *-q*, claiming that it is anaphoric. Section 9 sketches one verb incorporation phenomenon and how this fits in with other claims made here. Section 10 describes some differences between HgQ and the Quechua of Ancash.

Some disclaimers are in order:

1. This is work in progress. About certain aspects I feel quite confident; about others, I am uncertain. For example, I have little conviction about the number of bar levels for various categories. Despite my uncertainties, I have made explicit statements out of the conviction that this best serves the enterprise of either refining or falsifying them.

2. I am more concerned with certain leading ideas than with the details of implementation.

3. The claims made below do not stand or fall together. What I believe about the Case assignment properties of verbs, for example, has no logical connection with my claim that *-y* is an anaphor.

4. The claims made here are principally for HgQ and should not be interpreted as directly applicable to other Quechua languages, which differ in significant respects.[1] For example, HgQ case-marking possibilities for the subjects and objects of nominalized clauses differ from those in Cuzco Quechua (henceforth CzQ, see Lefebvre and Muysken [21]) and there is nothing in HgQ to motivate a lexical complementizer as there is in CzQ. Ecuadorian Quichua (EcQ) differs in lacking possessive suffixes, which play a central role in our analysis of HgQ. Even Ancash Quechua (AnQ),[2] which is relatively close to HgQ, differs significantly, as discussed in section 10.

5. Although I represent reference in terms of indices, I am not taking a stand in favor of indexing over linking theory. Some of what I propose might work out better under a linking theory. Likewise, I am not taking a stand on whether empty categories have inherent properties or should be functionally determined.

6. I make many claims that depend on the structural position of one clause with respect to another. I generally use examples with surface structures that fit my claims while recognizing that—in light of HgQ's rather free constituent order—many surface structures would not directly fit them. I feel free to do this because the binding principles are imposed at LF (logical form) rather than s-structure. I assume that between s-structure and LF, move-α moves clauses to the positions in which they are interpreted.[3]

7. Claims made in terms of phrase structure rules may be reinterpreted as claims about subcategorization frames, along the lines of Stowell [33].

The theoretical perspective adopted here is generally that of Chomsky's [4] Government and Binding theory; of course, a lot of water has gone under the bridge in the last decade. Fundamentally we assume the Binding Theory (Chomsky [4, p.188]), expressed in the following three "principles":

Principle A: An anaphor must be bound in its governing category.

Principle B: A pronominal must not be bound in its governing category.

[1] If Alfredo Torero is correct in speaking of two thousand years of diversification, proto-Quechua predates proto-Romance by 500 years.

[2] I have drawn examples from both Huaylas (HyQ) and Conchucos (CoQ). Unless it is important to distinguish between these, I simply use AnQ.

[3] This might be something like van Riemsdijk and Williams' [34, p.211] "reconstruction," which moves elements back to the position in which they were generated.

Principle C: A referring expression ("R-expression") must not be bound (i.e., it must be "free").

Time, space, energy, (intelligence, knowledge, will, etc.) do not permit me to give detailed arguments for all the claims I make here. Nonetheless, I hope to demonstrate that the perspective presented here is coherent and provides explanations (admittedly theory-dependent ones) for a wide range of facts about Quechua.

2 Categories and phrase structure rules

This section sketches some fundamental assumptions about the nature of HgQ categories and structures. I do not hold all of these with equal conviction; some are merely working assumptions to get on with the job.

2.1 Morphological categories

Weber [41] argues that HgQ morphological categories result from the following system of features:

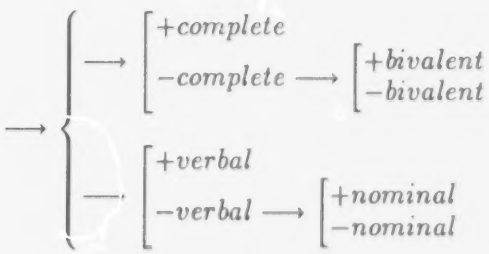

Figure 1: Features

These possibilities account for the major lexical categories (X^0's) as well as structures projected from them. Note that there is no category of adjectives (which form a single category with nouns, Weber [42, p.35,36]), nor are there prepositions.

The difference between X[+nominal] and X[−nominal] is that the former requires Case (except as discussed below) whereas the latter refuses it. The category of *-q* is [−verbal]; when it occurs in an environment where it is assigned Case (e.g., as a sister to P or Agr-S) it must be [+nominal], whereas in contexts where it is not assigned Case, it must be [−nominal].

There are three types of S:

1. S[+verbal] are finite clauses, with tense markers like -ø 'present' and *-ra* 'past'. In phrase markers these are labeled simply "S".

2. S[+nominal] are substantivized clauses with *-shqa*, *-na* and *-q*, as occur in relative clauses and complements. In phrase markers these are labeled "SN".[4]

3. S[−nominal] are adverbial clauses with *-pti*, *-shpa* and *-r* (as well as one case of *-sha*, to be discussed). These occur without case marking and demonstrate switch-reference. In phrase markers these are labeled "SA".

2.2 Structure

I make the following assumptions about phrase structures:

1. HgQ is head final, so the most fundamental rule is

   (1) $X^k \longrightarrow Y^{max}\ X^{k-1}$

   I assume either one or two bar levels for each category,[5] so $k = 1$ or 2. Thus, the basic rules are: $X^2 \longrightarrow Y^2\ X^1$ and $X^1 \longrightarrow Y^2\ X^0$.

2. Following Chomsky [7], S is projected from the subject agreement (Agr-S). I assume Emonds' SUBJECT PRINCIPLE: "Phrasal arguments of X external to $\bar{X}$ (i.e., subject phrases) must be NP's." For HgQ, this applies to finite clauses, substantivized clauses (substantivized complements and relative clauses) and to adverbial clauses. However, when the verb is substantivized or adverbialized, I assume that the index of Agr-S does not percolate to the S; this is presumably due to the fact that, in these cases, Agr-S is realized by a possessive person-marking suffix rather than a verbal person marker.

---

[4]This is quite similar to Hale and Platero's proposal ([19, p.31]):

> ...Specifically, it is suggested that nominalized sentences are maximal (two-bar) projections of the following feature composition: [+S,+N]. That is to say, they are simultaneously sentential and nominal. This combination of features, we contend, is to be understood in a special way. The category [+S,+N] has the *internal* make-up of a sentence, but *externally* it exhibits the syntactic behavior of a noun phrase...

Lefebvre and Muysken [21] reject this analysis for Cuzco Quechua. They treat nominalizations as verbal projections with variation at each of three bar levels to predict various case marking possibilities. Huallaga Quechua is not compatible with such an analysis because—unlike the situation in Cuzco Quechua—case marking within subordinate clauses is like that in main clauses.

[5]Perhaps a single bar level (uniformly) would suffice: [$_{VP}$ NP V], [$_{S}$ NP V Agr-S], etc. Quechua's non-configurational characteristics would follow from its rather free adjunction.

On the other hand, there are some advantages to projecting sentences from verbs. Emonds [13] claims that universally verbs have three bar projections, the subject NP being the specifier at the third level, but that the other categories only have two levels. Lefebvre and Muysken [21] assume three bar levels for the major categories of CzQ.

3. Here, "preposition" will refer to a case marking suffix, despite the fact that these are case-marking post-positioned clitics; they are suffixes for the morphology and prepositions for the syntax. I withhold judgment as to whether two bar levels are justified for prepositions,[6] representing only a single level in this paper:

   (2) $P^{max} \longrightarrow X[+nominal]^{max}\ P^0$

4. Languages with a distinct category of adjective allow adjective phrases to modify nouns and their projections. For Quechua, where adjectives and nouns form a single category, rule 3 allows substantives to modify substantives (with appropriate values for j and k[7]).

   (3) $X[+nominal]^j \longrightarrow Y[+nominal]^{max}\ X[+nominal]^k$

   Due to the head parameter, $Y[+nominal]^{max}$ is the modifier and $X[+nominal]^k$ is the head. The X[+nominal] modifier need not be assigned Case (presumably because it does not get a θ-role?). This rule is used for adjective phrases, relative clauses and for perhaps even compounds.

5. Rule 4 allows prepositional phrases to adjoin rather freely, where $k = j$ or $k = j - 1$:

   (4) $X^j \longrightarrow P^{max}\ X^k$

   For English, Emonds [13, p.27ff] demonstrates that X may be V, N, A, or P, but for HgQ the possibilities are more restricted. There never seem to be P's following V's.[8] There is a surprising absence of cases of $[_{NP}\ P^{max}\ NP]$. For example, *rumi wasi* 'stone house' is grammatical but **rumi-pita wasi* 'house of stone' is not.[9]

   In a case-marked substantive, i.e., a P^{max} with an $X[+nominal]^{max}$ complement, the feature [+nominal] percolates morphologically. Therefore, P^{max} is a possible

[6] Perhaps examples like $[_{P''}[_{P'}$ chay $[_P$ -pita]] pacha] 'all the way from there', $[_{P''}$ hinan $[_{P'}$ marka $[_P$ -man]]] 'right to the town', or $[_{P''}$ asta $[_{P'}$ marka $[_P$ -kama]]] 'all the way to the town' motivate the second level. More significantly, we claim below that $P = C(omp)$ and $P^{max} = C^{max}$; Baker's [1, ch.4] account of case variation in verb incorporation depends on C(omp) having two levels, distinguishing V-to-C movement from VP-to-Comp movement. If we adopt his analysis—coupled with the claim that $P = C(omp)$—then P^{max} must be P^2.

[7] Perhaps $j = k = 1$ or perhaps $k = j - 1$.

[8] I am assuming that *-man* 'conditional' as in *aywa-n-man* 'he might go' and *-paq* 'future' as in *aywa-shaq-paq* 'I will go' are not P's.

[9] Perhaps this is because substantives do not assign θ-roles indirectly, so P^{max} sisters to substantives are filtered out by the θ-Criterion. But why can't the P directly assign a θ-role? I do not know.

sister to P. This allows multiple case markers as in [$_{P^{max}}$[$_{P^{max}}$[$_{NP}$ *ha:cha*]-*wan*]-*naw*] 'as though with an axe', where both *-wan* and *-naw*[10] are prepositions. (See Emonds [13, p.33] for English examples.)

6. I assume HgQ to be configurational.[11] Subjects c-command their objects, but objects do not c-command their subjects.[12] There is a VP node, which is a maximal projection. However, a rule like $V^1 \longrightarrow N^{max}\ V^0$ is *not* needed for direct objects because direct objects are prepositional phrases, admitted by $V^1 \longrightarrow P^{max}\ V^0$ (an instance of rule 4).

7. Rule 5a (where α ranges over all possible bar levels) allows adverbial clauses to adjoin to verbs or verbal projections:

(5) a. $V^\alpha \longrightarrow X[-\text{nominal}]^{max}\ V^\alpha$
b. $S \longrightarrow X[-\text{nominal}]^{max}\ S$
c. [$_{CP}$ Comp [$_{C'}$ C IP]]

Adverbial clauses may also be sisters to a sentence, for which I propose rule 5b. If we consider every sentence to have the structure of 5c, adverbial clauses could occupy the Comp position.[13]

Recall that rule 4 allows $V^\alpha \longrightarrow P^{max}\ V^\alpha$. The similarity of this and rule 5a accounts for the distributional similarity of prepositional phrases (P^{max}) and adverbial clauses ($X[-\text{nominal}]^{max}$).[14]

2.3 Selection and subcategorization

Chomsky's [6] theory of barriers depends on whether or not a constituent is L-marked. Baker [1, p.56f] rephrases this in terms of "selection," which term I will use here.

I assume that whatever features distinguish these (features like [±nominal]) percolate morphologically so that selection (subcategorization) can refer to the feature

[10] *-naw* takes a predicate attributive complement; Emonds [13, section 6.3].

[11] HgQ demonstrates the following of Hale's [17] features of a non-configurational language: (a) It has very free word order. (b) It has discontinuous constituents. (c) It has frequent pro drop. (d) It lacks pleonastic NP's. (e) It uses a rich case system. (f) Its verbs are morphologically complex.

[12] This is unproblematic in most cases, but not when the subject comes between the object and the verb; there are various ways this might be handled, but considering these would take us too far afield for present purposes.

[13] That would be fine as the target of movement, but not as a site at which to generate them. For that reason, rule 5b is probably also necessary.

[14] There are also many *functional* similarities between adverbial clauses and prepositional phrases. For Ecuadorian Quichua, Muysken [24, p.29] claims that the suffix /-kpi/, which forms different subject adverbial clauses, "is derived from the nominalizer /-k/ and the locative postposition /-pi/." Although the diachronic claim is somewhat dubious, there is no doubt that functionally it makes little or no difference whether it is an adverbializer or a case-marked substantive.

at the level of the selected (subcategorized) structure. For example, since *aywa-sha-n-ta* is morphologically a single word (although syntactically a prepositional phrase), [+nominal] and whatever other features distinguish *-sha* from the other subordinators percolate to the P^{max}. The same is true for case markers. Since I have not elaborated this system of features, as a notational stop-gap measure I will use the subordinator or case marker itself as a feature, e.g., [+sha], [+ta]. (Since this makes [±nominal] redundant, I will not include it.)

Verb roots subcategorize for their P^{max} complements. For example, the transitive verb *chura-* 'place' has two possible meanings, each with a different subcategorization frame: (i) 'to locate at some place' [($P^{max}_{[+man]}$) __], (ii) 'to place in some office/position' [($P^{max}_{[+paq]}$) __]; Weber [42, p.230].

Verbs stems may also subcategorize for their P^{max} complements; verbal suffixes may alter the root's subcategorization. For example, *puñu-* 'sleep' may occur with a locative adjunct, e.g., *Chay-chaw puñun* 'He sleeps in there (locative)' but *puñu-ykU-* 'sleep' may occur with a goal, e.g., *Chay-man puñuykun* 'He lays himself down to sleep there (goal)'; Weber [42, p.228].

Verbs may select complements with a particular subordinator (*-y*, *-q*, *-r*, *-na*, *-shqa*, *-pti*):

- MOTION verbs (e.g., *aywa-* 'go' and *kacha-* 'send') select an optional purpose motion complement: [(S[+q]) __]; see section 8.3.

- INFINITIVE OBJECT COMPLEMENT verbs (e.g., *muna-* 'want' and *qalla-* 'begin') select an optional infinitive object complement: [(P[+y,+ta]^{max}) __]; Weber [42, p.25,6, footnote 5].

  Some infinitive object complement verbs (but not all) also select a complement with *-na*: [(P[+na,+ta]^{max}) __]. For example, *muna-* 'want' does but *qalla-* 'begin' does not.

- Some PHASAL verbs (e.g., *usha-* 'finish', *qalla-* 'begin') select same-subject adverbial clauses with *-r*: [(S[+r]) __]. Dialects vary as to whether the complement to a phasal verb is an infinitive object or a same subject adverbial clause (or whether both are possible). For example, in HgQ 6a is the usual form and 6b is possible but highly unusual. By contrast, in Huamalies Quechua both are possible, but 6b is the more common:

  (6) miku- eat { a. -y-ta (-inf-obj) / b. -r (-advss) } usha-ra-n finish-pst-3 · 'He finished eating.'

- SENSORY verbs (e.g., *rika-* 'see') select an optional object complement substantivized by *-q*: [(P[+q,+ta]^{max}) __]; Weber [42, 289]. Sensory verbs may occur with a direct object but without a complement, e.g., *Hwan-ta rika-n* (John-obj see-3) 'He sees John.' In this case the direct object receives *rika-*'s θ-role (for

the thing seen). When a complement also occurs, the complement receives that θ-role, although *rika-*'s Agr-O agrees with the direct object. For example, in

(7) Hwan qam-ta puñ-yka-q-ta rika-shu-ra-yki 'John saw you sleeping.'
John you-obj sleep-impf-sub-obj see-2obj-pst-2

Here, the complement [e *puñuykaq*] 'you are sleeping' receives *rika-*'s θ-role; the external argument of the complement appears as *rika-*'s direct object.

- FACTIVE verbs (e.g., *musya-* 'know') may occur with an object complement with *-sha* or *-na*. However, it is argued below that these verbs do not select such complements.

2.4 Case assignment

Subject agreement (Agr-S) assigns Case to the subject NP. Lefebvre and Muysken [21, p.49] write, "Subject agreement is described ...in terms of the assignment of subjective Case to the NP which is the immediate sister of AGR."

Prepositions are Case assigners, and NP's (other than subjects) generally receive Case from a preposition, rather than directly from a verb (root or stem). However, there are rare cases like 8a in which the NP must receive case directly from the verb.

In HgQ, virtually the only place where *-ta* 'obj' may be omitted is within a purpose-motion complement when (i) the object directly precedes the verb and (ii) the object NP is third person.[15] For example, in 8b, *Marya* must be assigned Case by *rika-*:

(8) Hwan shamu-sha {a. Marya rika-q (Mary see-sub) / b. *noqa rika-ma-q (me see-1obj-sub)}
John come-3perf

'John came to see {a. Mary / b. me}.'

In such cases the verb must assign Case to the object.

Consider predicate complements to *ka-* 'be' like *runa* 'man' in *Hvan [runa karan]* 'John was a man' and *hatun* in *Hwan [hatun karan]* 'John was big.' Either these are not subject to the Case Filter because they are not arguments or they are exceptionally assigned nominative case by *ka-* 'be'.[16]

[15]This can be explained as follows: When an overt object agreement marker occurs, like *-ma-* in 8, it absorbs the Case assigned by the verb. Only when the object is third person, for which the agreement marking is implicit, is the verb's Case available for assignment to the object.

[16]The suffixes *-hina* and *-niraq* must have recently developed from verbs that directly assigned Case to prepositionless complements.

2.5 θ-roles

I assume Emonds' theory [13] of indirect θ-role assignment, whereby a verb may assign a θ-role to an NP in a prepositional phrase. Verb roots and stems generally assign θ-roles to their complements *indirectly*.[17]

The projection principle and the theta criterion work together to impose the following constraint (approximately stated): the θ-roles (semantic relations) determined by lexical items in d-structure must be preserved in s-structure and LF. This rules out analyses like "subject to object raising" to derive, for example, 9b from 9a:

(9) a. Hwan mayasha [(qam) chakraykita hampiykaqta]
John sensed(3obj) you your field treating

b. Hwan qam$_k$-ta mayashurayki [t$_k$ chakraykita hampiykaqta]
John you-obj sensed(2obj) your.field treating

'John smelled you putting insecticide on your field.'

In 9b *qam* 'you' is the agent of *hampi-* 'treat' and must not be assigned a competing θ-role by *maya-* 'sense', despite its triggering verb agreement in the higher clause. (As Teodoro Cayco said, "That is how we say it, even though it is the insecticide that John smells.") Emonds' extended θ-criterion allows an analysis of 9 in which *qam* 'you' is assigned its θ-role by *hampi-* 'treat'.

When *-ta* 'obj' heads a direct object phrase, it does not assign a θ-role, this being assigned indirectly by the verb. That is not to say that *-ta* never assigns a θ-role directly. In 10, where it accompanies the intransitive verb *aywa-* 'go', *-ta* assigns a θ-role indicating the terminus of some motion.[18] (Note that this is not a (grammaticized) direct object.)

(10) Pillku-ta aywa-yka-:. 'I'm going to Pillku.'
Pillku-obj go-impf-1

Since *-ta* may directly assign a θ-role, it is possible to have two *-ta*-marked NP's. The verb assigns a θ-role to the direct object, but Agr-O reflects the person of the indirect object, which gets its θ-role directly from the preposition; see 11:

(11) Marya-ta shikra-ta qo-yku-shka-: 'I gave the basket to Mary.'
Mary-obj basket-obj give-in-perf-1

[17] For AnQ, Miller [22, p.104] gives the following example, in which *-ta* is absent: *awa-y yacha-q-kuna-wan* (weave-inf know-sub-plur-with) 'those who know how to weave'. This may show that verbs can assign θ-roles directly in some circumstances, at least in some dialects. On the other hand, it may be a compound [[awa-y] [yacha-q]]-kuna-wan.(?)

[18] Emonds [13, p.35, footnote 17] writes: "I have not found any clear reason when V is intransitive between V assigning a θ-role directly to a PP or indirectly to the phrase immediately dominated by PP. We might say that an obligatory intransitive verb can assign a θ-role directly only to PP, since direct θ-role assignment applies to at most one sister of V."

Marya, the indirect object—understood as the terminus of some motion, is assigned its θ-role directly by the preposition. *shikra*, the direct object, is assigned its θ-role indirectly by the verb. (Both are assigned Case by their prepositions.)

Thus the θ-role is assigned to an argument for which the verb is not inflected, and Agr-O does not receive a θ-role from the verb. This is true in several cases. Many Quechua dialects show synchronic and/or diachronic evidence for the movement of *-shu* '2obj' from a transitive verb to the auxiliary verb *ka-* 'be':

(12) d-structure: maqa-shu -shqa ka -n 'He had hit you.'
s-structure: maqa-t_j -shqa ka-shu$_j$ -nki

ka- 'be' is an intransitive verb so it has no θ-role to assign *-shu*. Therefore, *-shu* '2obj' cannot be generated as an argument of *ka-*. *-shu* gets its θ-role from the lower, transitive verb, so it must have been generated there and moved to the auxiliary. This is rather compelling evidence that Agr-O may move from a complement to the verb that selects the complement.

Another case where Agr-O does not get a θ-role involves the "clitic climbing" discussed in 7.1. In 96b and c, *muna-* 'want' does not assign a θ-role to *-ma:* '1obj'. *-ma* gets its θ-role by being coindexed with a position in the infinitive object complement.

Another case where Agr-O does not get a θ-role involves movements out of sensory verb complements. For example, in 9b *-shu* appears in the main verb but gets its θ-role from the verb of the complement.

Baker [1, p.310] writes:

> ...one can follow Levin and Massam (1984) and claim that the VP always assigns the theta role to the Infl node first. Then, if this node contains an argument, nothing further will happen; if it does not, it will transmit the theta role on to an argument in the subject position proper, possibly by way of the subject-Infl agreement relation.

This is an attractive possibility for Quechua. We might even be tempted to extend it to direct objects; that is, we might argue that the θ-role is assigned to the Agr-O and secondarily transmitted to the overt object NP, if present. However, this would not be correct because in various cases Agr-O is not coindexed with the argument to which the verb assigns a θ-role. Let us consider one case (from Weber [38, p.21]) :

(13) Tayta-yki qam-ta qo- {a. -ma (1obj) / b. -ø (3obj)} -ra-n
father-2p you-obj give -past-3

'Your father gave you to {a. me / b. him}.'

I believe *qu-* 'give' assigns a single θ-role to the direct object, the indirect object getting its θ-role from the preposition *-ta*.[19] However, as 13 shows, Agr-O reflects the

[19] I assume that HgQ is not a true double accusative language, that *qu-* 'give' is not really a "dative-shift triadic verb."

person of the *indirect* rather than the *direct* object. Several analyses proposed below depend crucially on disassociating Agr-O and θ-role assignment.

ka- 'be' is also exceptional in *directly* assigning a θ-role to the complement; see Emonds [13, section 6.3].

2.6 The relation of morphology and syntax

The lexicalist hypothesis claims that syntax does not have access to the internal structure of words. Baker [1, p.431] (referring to Di Sciullo and Williams [12]) summarizes it as follows: "...words are completely atomic units with respect to the syntax and cannot be affected by transformations." This means that the terminal nodes of a syntactic tree are *words*, ...not *morphemes*. This imposes an extreme and—in the opinion of many—untenable restriction on how morphology and syntax are related.

A weaker form of the lexicalist hypothesis allows inflectional—but not derivational—morphology to interact with the syntax. However, even this disallows structures that seem justified in Quechua, along the lines of Weber [37], which attempted an integrated morpho-syntax, and Weber [39], which catalogued diverse Quechua data inconsistent with the lexicalist hypothesis.

To maintain the lexicalist hypothesis, Muysken [25] develops a "theory of morphological control" whereby features of a word can be passed to abstract positions outside the word. This allows positing syntactic structures believed to be universal but for which Quechua provides little or no concrete evidence. This theory is assumed in Lefebvre and Muysken [21] for both COMP and CASE. I do not assume it here.

How does syntax interact with morphology? I assume that morphological features percolate—*whether the process that built the higher structure was morphological or syntactic.* For example, if a prepositional phrase is adjoined to a univalent verb the whole expression is univalent: $[_{V[-bivalent]}\ P^{max}\ V[-bivalent]]$.[20] Likewise, syntactic features may percolate to a higher structure built by a morphological process. For example, some adverb-like suffixes attach to verbs without changing any syntactic property of the verb.

Di Sciullo and Williams [12] reject the "one grand science of the word/phrase." However this is pretty much the position I take, that there is a single set of morphological and syntactic rules which can be intermixed.[21] I assume a single, connected morpho-syntactic phrase marker, but neither the morphological nor the syntactic part need be connected independent of the other. This is the null hypothesis, sim-

[20] This is akin to an assumption made by Di Sciullo and Williams [12].

[21] I do not mean to suggest that they can be intermixed randomly. There may be certain equivalence constraints relating syntactic and morphological categories. For example, $X^{max} \Rightarrow$ [+complete], i.e., all maximal projections are morphologically complete. $V^0 \Rightarrow$ [−complete], i.e., the lexicon only contains incomplete verbs (which may be further specified as [−bivalent] (intransitive) or [+bivalent] (transitive)). The only exception I know of is *kuyra:* 'be careful lest' (from Spanish *cuidado*).

pler than positing one (or more!) morphological components, which amount to very strong stipulations.[22]

3 Verbal inflection

For many years, only highly configurational clause structures were admitted, with the structure [$_S$ NP [$_{VP}$ V NP]] or some permutation thereof. Hale [18] brought to the generative framework the notion of "non-configurationality," i.e., some languages have flat phrase structures, not the hierarchical structures posited for English. Chomsky [6, p.3] admitted the following possible structures (among others):

a. [$_{V''}$ NP [$_{V'}$ V NP]]
b. [$_{V''}$ NP V NP]
c. [$_{C''}$[$_{C'}$[C [$_{I''}$ NP [$_{I'}$ Infl [$_{VP}$ V...]]]]]]

Under current thinking—in which move-α applies to any category, perhaps subject to parameterization—greater integration of morphology and syntax is possible. For example, following work by Emonds, Pollock [29] argues for a structure like 14a. In English, inflection lowers to adjoin to the verb as in 14b:

(14) a. [$_{IP}$[$_{NP}$ John] [$_{I'}$[$_{I}$ Pres] [$_{VP}$[$_{Adv}$ often] [$_{VP}$[$_{V}$ kiss] [$_{NP}$ Mary]]]]]
b. [$_{VP}$[$_{V}$[$_{V}$ kiss] [$_{I}$ Pres]] [$_{NP}$ Mary]]

However, in French the verb raises to join the inflection, as shown in 15:

(15) a. [$_{IP}$[$_{NP}$ Jean] [$_{I'}$[$_{I}$ Pres] [$_{VP}$[$_{Adv}$ souvant] [$_{VP}$[$_{V}$ embrasse] [$_{NP}$ Marie]]]]]
b. [$_{I'}$[$_{I}$[$_{V}$ embrasse] [$_{I}$ Pres]]]

Refining Pollock's proposal, Chomsky [7] proposes the structure in Figure 2. For HgQ, the agreement position for the object, Agr-O, is particularly noteworthy. HgQ verbs have both subject and object agreement marking, with intervening tense/taxis; see 16 and the examples of 17:

(16) verb root ...object- $\left\{\begin{matrix}\text{tense}\\ \text{taxis}\end{matrix}\right\}$ -subject ...

(17) rika- -ma -ra -n (see-1obj-past-3) 'he saw me'
rika- -ma: -na -n -paq (see-1obj-sub-3p-pur) 'for him to see me'
rika- -ma -sha -n -ta (see-1obj-sub-3p-acc) 'that he see me'
rika- -ma -pti -n (see-1obj-adv-3p) 'if he sees me'

Omitting neg and ADV for the present, and putting the heads in final position, we have a structure as in Figure 3a. Figure 3a strikes me as a reasonable s-structure,

[22]Another way to interpret my proposal is that the boundary between morphology and syntax traditionally assumed for Quechua has just been misplaced, and that much of what was traditionally treated as morphology is really syntax, and that thus it is fitting that the corresponding rules mix with the rest of the syntax.

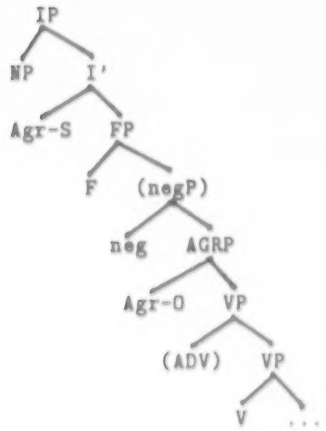

Figure 2: Chomsky's 1989 proposal for clause structure

but if one were concerned to satisfy the lexicalist hypothesis (e.g., to get all and only the verb's morphemes under a single node) one could argue for successive movements of the verb (with adjunction) up to Agr-S, to arrive at the structure in Figure 3b. (Chomsky suggests this, but I am not sure that these adjunctions would be permitted.) Note that the resulting verb in 3b has the left-branching structure first suggested by Parker [28, p.51] and elaborated in Weber [37, 41], Muysken [26] and Lefebvre and Muysken [21, chap.3].

I will make the following simplifying assumptions and modifications to Chomsky's proposal (in Figure 2):

1. ADV appears only as an adjunct to the VP. In addition to this possibility, I will also allow ADV adjoined to AGRP or IP. Here, ADV could be of various kinds:

   a lexical adverb: Most of these are derived from substantives by *-pa*:

   (18) Shamu-shka-: come-perf-1 $\left\{\begin{array}{l}\text{a. chaki (foot)}\\ \text{b. chakay (night)}\\ \text{c. sasa (difficult)}\\ \text{d. rasun (real)}\end{array}\right\}$ $\begin{array}{l}\text{-pa}\\ \text{-gen}\end{array}$.

   'I came $\left\{\begin{array}{l}\text{a. on foot (means)}\\ \text{b. by night (time)}\\ \text{c. with difficulty (manner)}\\ \text{d. really (veracity)}\end{array}\right\}$.'

   a prepositional phrase: This could be either $[_{PP}$ NP P] or $[_{PP}$ S[+nominal] P].

   an adverbial clause: These are S[−nominal], the feature [−nominal] morphologically percolating from *-pti*, *-r*, *-shpa* or *-sha* in F.

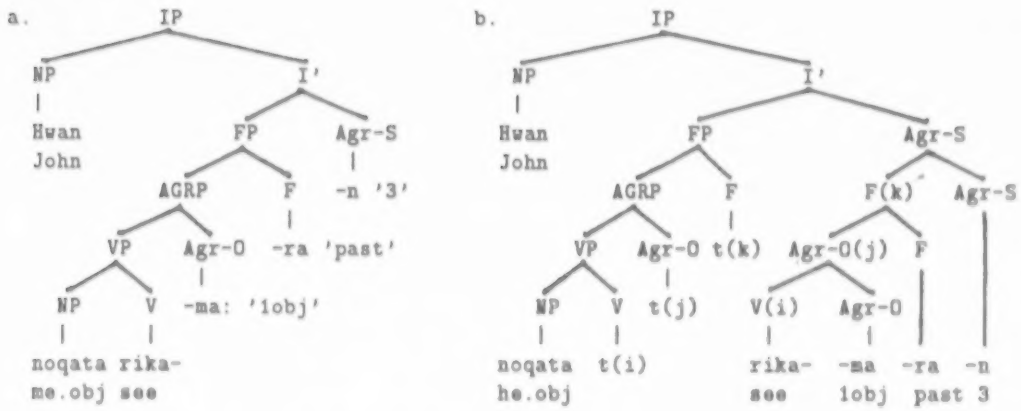

Figure 3: The d-structure and s-structure of a simple finite clause

neg: By assuming that *neg* is an adverb, I do not need to specifically include it as in Figure 2.[23]

2. In Figure 2, FP is obligatory. I will treat it as optional, absent when the subordinator is *-q*, *-r*, or *-y*. (Alternatively, these could be regarded as portmanteaus of F and I.) Also, I have made the subject and object NP's optional; I propose that they are absent rather than PRO or pro.

3. In Figure 2 the subject NP dominates Agr-S whereas Agr-O dominates the object NP. If c-command is defined in terms of maximal projections, the subject NP and Agr-S mutually c-command each other. However, assuming that VP is a maximal projection, Agr-O c-commands the NP object—but not conversely. I am not convinced that this asymmetry is a virtue.[24]

   Van Riemsdijk and Williams [34, p.275] write:

   > ...there is a sense in which AGR_i is just as much the subject of S as NP_i. Going a little further, suppose that AGR_i, when present, is

[23] Baker [2, p.390] makes the same move; he says, "*Not* is a preverbal adverb."

[24] It has the advantage that the verb—not the Agr-O—governs the object NP. Baker [1, p.313] writes:

> The passive affix must receive a theta role because it is a full-fledged nominal argument and therefore subject to the Theta Criterion. It must receive an EXTERNAL theta role, because it is generated under the Infl node and therefore outside the maximal projection of the V. Theta theory requires that the external theta role and only the external theta role of a given item can be assigned to such a position.

> considered the most *prominent part* of the "discontinuous subject" consisting of NP_i and AGR_i.

I believe this is also true of Agr-O with respect to the object NP, i.e., they are part of a "discontinuous object", the most prominent part of which is Agr-O.

4. To simplify notation, I will represent the subject NP as a sister to Agr-S, and the object NP as a sister to Agr-O, thereby making both Agrs and their corresponding overt NPs mutually c-commanding. I withhold judgment as to whether there is any substantive advantage to this move. I assume that co-indexing the Agr and corresponding NP does not provoke a binding violation, irrespective of the status of Agr as an anaphor, pronominal or referring expression.

5. Object noun phrases are treated as prepositional phrases headed by (the preposition) *-ta* 'obj'. As discussed in section 2, the NP gets Case from the preposition and its θ-role indirectly from the verb.

Taken together, these proposals give the structure of Figure 4a, exemplified in 4b. It

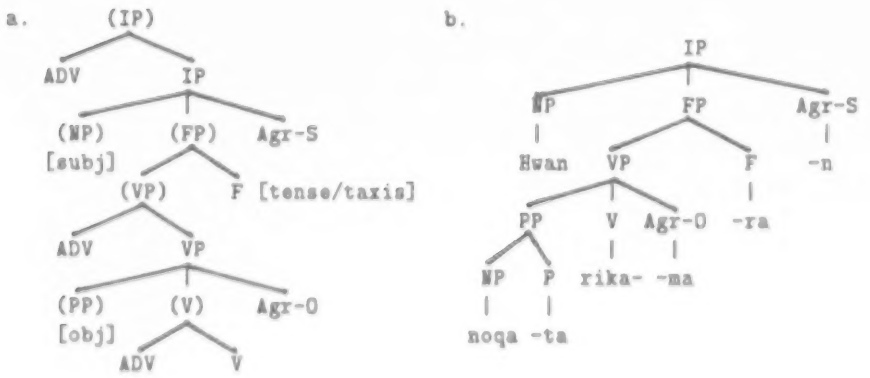

Figure 4: Revised Structure

bears mentioning that these proposed modifications are simplifications: It is simpler (more parsimonious) to assume a general adjunction of adverbs than to stipulate that they occur in a particular position, to assume that NEG is an adverb than to posit a special category for it, to have the parts of the discontinuous subject and object be sisters rather than relate them by some other mechanism, to consider the case-marking suffixes as prepositions than as simply inflectional suffixes.

Now let us consider the nature of the Quechua agreement suffixes. Van Riemsdijk and Williams write [34, p.302]:

> We could say, then, that AGR, acts as a proper governor when rich. Since the choice between rich and poor is made not at the level of each structure

> but at the level of the grammar of the language, we must identify some formal characteristic of "rich" vs. "poor." One possibility is to say that Agr may or may not have categorial features. Since Agr has the typical nominal features for gender, number, and person, it has been suggested that Agr actually is a noun (i.e., [+N,−V]) when rich.

I propose that the following suffixes are "rich" in Van Riemsdijk and Williams' sense: OBJECT MARKERS:[25] *-ma:* '1obj', *-shu* '2obj', *-ø* 'unspecified object', *-kU* 'reflexive', *-nakU* 'reciprocal'; PERSON MARKERS: both possessive and verbal; see Table 1, page 103; ANAPHORIC SUBORDINATORS: *-q* 'sub', *-r* 'advds' and *-y* 'inf'; PORTMANTEAUS OF F AND AGR-S: *-nqa* '3fut', *-sha* '3perf'; PARTICIPIALIZERS: *-sha* 'participle', *-:ni* 'without having' (Weber [42, p.287, 366]).

Our primary argument for the nominal status of these suffixes is the many explanatory advantages that follow from submitting them to the binding theory. I will now discuss one case, that of verbal inflection; other cases will be discussed below.

3.1 The subject marking anomaly

Verbal inflection generally follows the pattern in 16, as illustrated in 17. But consider the SUBJECT MARKING ANOMALY:[26] "If the object involves a second person (i.e., it is second person or it is first person plural inclusive) and the subject is third person, then the "subject" marker reflects the person of the object rather than the subject"; Weber [37, p.20] and [42, p.97]. For example:

(19)

	object	...	subject	
a.	-shu-		-nki	'3 subject, 2 object'
	2		2	
b.	-ma:-		-nchi:	'3 subject, 12 object'
	1		12	

An explanation for this pattern is available if we recognize that the suffixes involved are pronouns subject to the binding theory. If we take *-nki* '2' and *-shu* '2obj' at face value in 19a, then the pronoun *-shu* is coindexed with *-nki* (both being second person) so the pronoun *-shu* is bound in its governing category (*-nki* being the closest accessible subject). This violates Principle B, so is not possible:[27]

*$[_S[_{FP}[_{VP}\ldots[_{Agr\text{-}O}$ -shu$_2$]] $[_F$ ø]] $[_{Agr\text{-}S}$ -nki$_2$]]

[25] An argument for the nominal status of the object markers is that they can be moved; see section 7.1.

[26] Milliken [23] correctly objects to calling this an anomaly. She attempts a functional explanation for this phenomenon, invoking an empathy hierarchy. I do not find her analysis convincing; it only works for *some* tenses in *some* dialects. More evidence for it exists in Southern dialects than for Central ones.

[27] I will sometimes use *1*, *2* and *12* for indices that are first person, second person, or first person plural inclusive. For third persons, or when person is not an issue, I use *i*, *j*, *k*, etc.

This impossibility forces *-nki* to be interpreted differently. Suppose (as has often been suggested since Yokoyama [44] first treated *-nki* as two morphemes) that *-nki* can be taken as *-n* '3' followed by *-ki* '2'. *-n* '3' is not coindexed with *-shu* '2obj' because of the difference in person, so there is no binding violation. But *-ki* '2' may now be coindexed with *-shu* because it is outside of *-shu*'s governing category, *-n* being an accessible subject. Indeed, assuming that *-ki* must get a θ-role, it must be coindexed with either the Agr-S or the Agr-O.[28]

$[_S[_{FP}[_{VP} \ldots [_{Agr\text{-}O}$ -shu$_2$]] $[_F$ ø]] $[_{Agr\text{-}S}$ -n$_3$]] -ki$_2$

Now consider 19b. As with *-nki*, I assume that *-nchi:* can be taken either as a single morpheme meaning '12' or as two morphemes, *-n* '3' and *-chi:* '12'. Since *-ma:* is a pronoun, to take *-nchi:* as a single morpheme in 19b would provoke a Principle B violation:[29]

$^*[_S[_{FP}[_{VP} \ldots [_{Agr\text{-}O}$ -ma:$_1$]] $[_F$ ø]] $[_{Agr\text{-}S}$ -nchi:$_{(1,2)}$]]

This forces the bi-morphemic analysis:

$[_S[_S[_{FP}[_{VP} \ldots [_{Agr\text{-}O}$ -ma:$_1$]] $[_F$ ø]] $[_{Agr\text{-}S}$ -n$_3$]] -chi:$_{(1,2)}$]

As before, *-ma:* is not bound in its governing category, because *-n* '3' is the accessible subject. This accounts for two facts: (i) The subject is interpreted as third person, since *-n* occupies Agr-S. (ii) The object is interpreted as first person *plural inclusive*, since *-ma:* '1obj' in Agr-O is coindexed with *-chi:* '12'.

This is a wonderful analysis, but unfortunately it fails for many cases outside of the present tense, for example, in the simple past tense *rika-shu-ra-yki* (hit-2obj-pst-2) 'he hit you', substantivizations like *rika-shu-sha-yki* (hit-2obj-sub-2poss) 'that hit

[28] An implementation detail with which I have not been concerned is the structural position of person markers following Agr-S. For the moment I assume (without much conviction) that *-ki* is simply adjoined to IP.

Quite remarkably, nominal inflection shows a parallel to multiple person markers: Nouns may be "doubly possessed," as in the following examples (from Weber [36, section 2.2.1]):

> Cristobal-pa ka:rru-n-ni:
> Christof-gen car-3p-1p
> 'my-Christof's car' (Christof's car, which is mine because Christof is my son)
>
> ... llachapa-n-ni:-ta-pis pasaypa rachi-r ...
> clothes-1p-3p-obj-even terribly rip-advss
> '...terribly ripping my-his clothes' (his clothes, which are mine because he is my son)

Again, without much conviction I will assume that the outer possessive simply adjoins to the (already possessed) NP.

[29] I assume that—by virtue of bearing an index for first person—*-ma:* cannot be coindexed with *-nchi:* which *contains* that index. There are alternative ways to get the same effect. Some such principle is required to explain switch-reference facts.

you', the future *rika-ma:-shun* (hit-1obj-12fut) 'he will hit us(incl.)', etc. The problem is that the forms of the morphemes do not lend themselves to a bi-morphemic analysis as they do for *-nki* and *-nchi:*.

To have our cake and eat it too, we must make our analysis less concrete, dissociating it from the actual *forms* of morphemes.[30] Instead of further segmenting morphemes (as we did for *-nki* and *-nchi:*), we recognize that morphemes may have a special property—the DUAL INTERPRETATION PROPERTY (DIP)—whereby they can be indexed in either of two ways: normally they would be indexed as '2' or '12', but wherever this binding would violate Principle B, they are indexed as a third person.[31]

The necessity of making the DIP independent of form is obvious in the case of -ø '12p'; it has no form and yet has the DIP, as shown in section 5.3. Further support is seen in how dialects differ: in most dialects the second person imperative *-y* has only a second person interpretation, so **-shu-y* (-2obj-2imp) is ill-formed and 'May he hit you!' (third person imperative) is said *rika-shu-nki* (rika-2obj-2fut). However, in Northern Huamalies *-y* '2imp' has the DIP: *rika-shu-y* (rika-2obj-2imp) 'May he hit you!'.

When *-nki* and *-nchi:* are interpreted bimorphemically, the object is interpreted as having the person that *-nki* or *-nchi:* would have had, if it had not been forced to a non-third interpretation: $-shu_i\text{-}n\text{-}ki_j$ is interpreted as '3⇒2' and $-ma_i\text{-}n\text{-}chi:_j$ as '3⇒12'.

Suffixes which have the DIP have this characteristic, whether or not they can be analyzed in terms of form like *-n-ki* and *-n-chi:*. That is, whenever a DIP suffix is indexed as third person, the object is indexed with the DIP suffix's other value. I refer to this as the DIP COROLLARY.

Curiously, when a DIP suffix's normal interpretation would violate Principle B, the following DIP suffix both *does* and *does not* bind the Agr-O. The third person index in Agr-S does *not* bind the Agr-O, but its other index *does* bind it—from outside its governing category. Therefore the Agr-O is interpreted as having the person of the DIP suffix's other value. This curious circumstance results because a DIP suffix may be interpreted as having two indices, a third person in Agr-S and the other coindexed with Agr-O.

This is not very extraordinary in light of other suffixes which have two indices, such as *-q* (QI) or *-yki* (QII) '1⇒2 present' and *-sh(q)yki* '1⇒2 future'. One way to analyze these is simply as portmanteaus of Agr-O, F and Agr-S. However a more elegant analysis is possible if we allow an -ø 'unspecified' in Agr-O, as we will now see.

[30] I believe it is no accident that the DIP can be analyzed strictly in terms of form in the present tense. This enables children to learn it based on concrete evidence before they must extend it as an abstract property to other morphemes.

[31] Another way to implement the DIP would be to claim that a null third person suffix occupies Agr-S, allowing the DIP suffix to be coindexed with the object. Such an analysis works for some but not all cases.

-ø in Agr-O has often been analyzed as a *third* person object marker.[32] However, it is not inherently third person because it is sometimes coindexed with overt 1, 2 or 12 object NP's. This is most obvious in a range of Central dialects where *rika-ø-:* (see-ø-1) can mean either 'I see him' or 'I see you'. It is less obvious in cases like *qam$_i$ ta pa:ga-ø$_j$-pa:-ø$_k$-shaq* 'I will pay you$_j$ for him$_k$.' -ø 'unspecified object' is pronominal, resisting binding Agr-S.[33]

Given -ø 'unspecified' in Agr-O, we can analyze *-yki* '1⇒2 present' and *-sh(q)yki* '1⇒2 future' as follows:

- In *-yki* '1⇒2', *-y* is indexed '1'. Because -ø is a pronoun, it is not bound by *-y*. Rather, it is bound by *-ki*: -ø$_j$-y$_1$-ki$_{j=2}$.
- *-sh(q)ayki* '1⇒2future' works the same way as *-yki* '1⇒2': -ø$_j$-sh(q)a-y$_1$-ki$_{j=2}$. An advantage of this analysis is that *-sh(q)a* is in the position a tense marker would normally have.

(Following this analysis, we might analyze *-q* '1⇒2fut' as having two indices -q$_{i,j}$, one first person and the other second. The second person index would bind the null pronoun in the position of object: -ø$_j$q$_{i,j}$-.)

3.2 Reflexives and reciprocals

-kU 'reflexive' and *-naku* 'reciprocal' are anaphors, bound by the Agr-S of their clause:

(20) maqa- hit { a. -ku$_j$ (refl) / b. -naku$_j$ (recip) } -n$_j$ -3 { a. 'he hits himself' / b. 'they hit each other' }

-nki, *-nchi:* or some other DIP suffix in Agr-S following *-kU* 'reflexive' or *-naku* 'reciprocal' never violates Principle B because *-kU* and *-naku* are anaphors. Therefore the DIP suffixes never have anything but their non-third interpretation following *-kU* and *-naku*.

3.3 Concluding remarks on inflection

The important point of this section is that the agreement suffixes are nominals and, as such, are subject to the binding theory. Principle B provides the essential ingredient for an explanation of what otherwise seems "anomalous".

[32] This is in paradigmatic contrast to *-ma:* or *-wa* '*first* person object' and *-shu* '*second* person object'.

[33] Other cases requiring -ø 'unspecified' in Agr-O are as follows:

- In AnQ *yachatsiqniki* 'in order to teach you', -ø is bound by *-niki* '2p' as follows: *yacha-tsi-ø$_j$-q-niki$_{j=2}$*. (As argued below, *-q* is an anaphor but resists binding by an immediately following possessive suffix.)
- CzQ *llamiqnin warmi* "the woman that touched him" (Luke 7:39) would be analyzed as *llami-ø$_j$-q$_k$-nin$_j$ warmi$_k$*.

4 The structure of complement clauses

Is there a COMP node, to which subordinate clauses are sisters? It is entertaining to posit a COMP node much like that posited for English. We might analyze 21a as in 21b:

(21) a. Maqa-ma-sha-n-ta musya-nki. 'You know that he hit me.'
hit-1obj-nom-3-obj know-nki
b. [$_S$[$_{NP}$ pro] [$_{VP}$[$_{S'}$[$_S$ maqa-ma-sha-n-ta] COMP] [$_V$ musya-nki]]]

This is essentially Lefebvre and Muysken's [21] analysis for CzQ, in which COMP is usually abstract (having physical realization only when filled by *chay-qa*); Muysken's [25] theory of morphological control communicates inflectional features between the subordinate verb and the COMP. For CzQ there are some cases that might be lexical complementizers, but for HgQ, COMP would be a purely abstract entity, i.e., it would never have physical realization. For this reason—and because I believe a better analysis is available for HgQ—I do not adopt Lefebvre and Muysken's analysis.

4.1 The COMP found: case markers

Emonds [13, p.281] argues that "... *all* subordinate clause S's are deep structure sisters to V or to P." This involves recognizing that a COMP is really a P and an S' is really a P': all instances of [$_{S'}$ COMP S] are really instances of [$_{P'}$ P S]. For a head final language, then, all [$_{S'}$ S COMP] are instances of [$_{P'}$ S P]. For Quechua, an S which is a sister of a P must be [+nominal], so case-marked, substantivized clauses are instances of 22, a case of rule 2:

(22) [$_{S'}$ S[+nominal] P]

How do we justify treating the case markers as complementizers, that is, as prepositions?

First, the case markers show a certain amount of independence. To take one example, in relative clauses, when the "embedded coreferent" (Weber [38]) is gapped, in rare instances the accompanying case marker is retained and "floats" to the case marker of the noun phrase containing the relative clause (which c-commands the position from which the case marker floats).[34] For example, from the d-structure in 23a, *-wan* moves, resulting in the s-structure in 23b: [35]

(23) a. [[e-wan yaku-man yayku-sha-n] ro:pa] chakikuyka-n
b. [[t_i yaku-man yayku-sha-n] ro:pa]-wan$_i$ chakikuyka-n
water-goal enter-rel-3 clothes-with be drying-3
'The clothes with which he entered the water are drying.'

[34] Is case floating a case of COMP incorporation?

[35] In this case it would be possible to analyze *ro:pa-wan* as having been moved into the position of the head: [$_S$[$_{NP}$[$_{S,NP}$] e yaku-man yayku-sha-n] [$_{NP}$ ro:pa-wan]] [$_{VP}$ chakikuyka-n]]. However, this is not possible for all examples.

Consider another case (Weber [42, p.228]). *-wan* floats from within the purpose clause, to the end of it; see Figure 5:

(24) Qellay-ta-pis apa-nki mas achka-ta ranti-mu-na-yki-paq-[-wan].
money-obj-indef take-2 more much-obj buy-afar-sub-2p-pur-with
'Take money with which to buy more (food).'

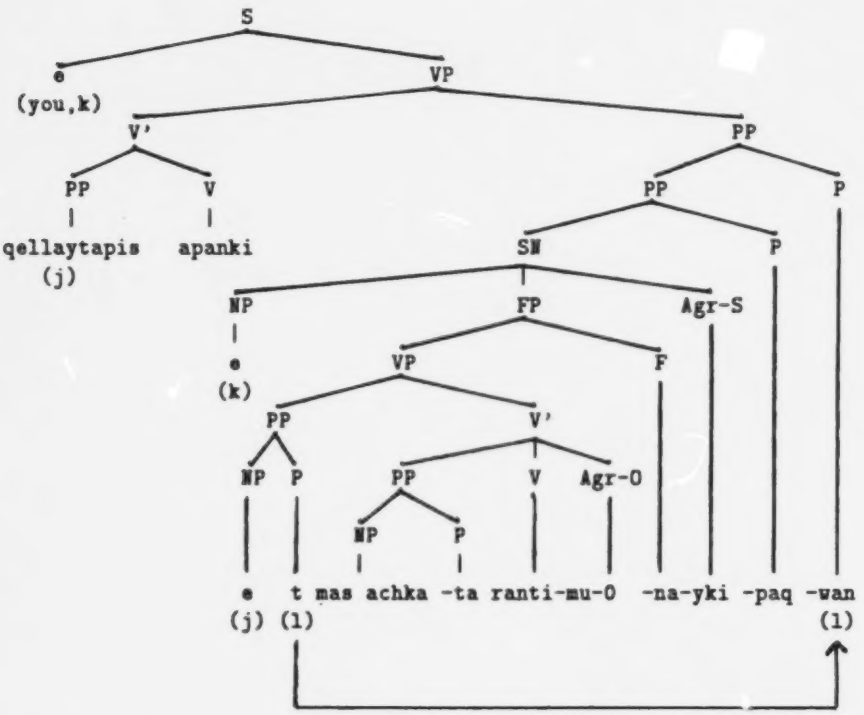

Figure 5: Take money with which to buy more (food).

A second reason for considering case markers as complementizers is that P acts like an "escape hatch" for certain movements (reminiscent of the behavior of COMP in some languages): "Any constituent moved outside of the scope[36] of a case marker must be marked with (such) a case marker." Weber [38, p.54].

Lefebvre and Muysken argue that case floating is movement through a "COMP-like CASE position" (where CASE is usually an abstract position). Their insight—that CASE has COMP-like behavior as an escape hatch—is more straight-forwardly implemented on Emonds' view that COMP's *really are* P's. Indeed, if complementizers *are* prepositions, it is not surprising that some P's demonstrate COMP-like

[36] I use "scope" to refer to the c-command domain of P, that is the NP that is the sister of P.

behaviors. We can dispense with the abstract COMP and CASE, as well as the theory of morphological control (whereby features are passed to the abstract positions). And rather than having the "scope" of CASE depend on percolation,[37] we simply have "the c-command domain of the P."

Let us consider various cases of movement from a noun phrase, starting with the movement of a simple modifier. From its d-structure in Figure 6a, *hatun* escapes the lower phrase through the postposition, yielding the s-structure (simplified) in Figure 6b:[38]

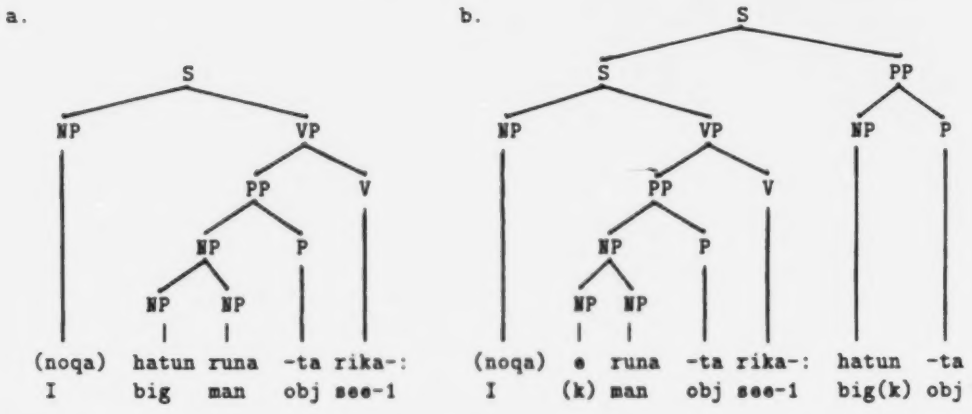

Figure 6: I see the big man.

Now let us consider a case where, by multiple movements through two P's, a substantive gets two case markers. First, the d-structure:

(25) [$_S$ noqa [$_{VP}$[$_{PP}$[$_{NP}$[$_{PP}$[$_{N'}$[$_{NP}$ hatun] runa] [$_{PP}$ -pa]] [$_{NP}$ wasi-n]] [$_{PP}$ -ta]] [$_V$ rika-:]]]
I big man gen house-3p obj see-1
'I see the big man's house.'

hatun first escapes the lowest PP, passing through [P *-pa*]. Then it escapes the higher NP, passing through [P *-ta*]:

(26) [$_S$[$_S$ noqa [$_{VP}$[$_{PP}$[$_{NP}$[$_{PP}$[$_{N'}$[$_{NP}$ t_k] runa] [$_{PP}$ -pa]] [$_{NP}$ wasi -n]] [$_{PP}$ -ta]] [$_V$ rika-:]]]
I man gen house -3p obj see-1

[$_{PP}$ hatun-pa-ta]$_k$] 'I see the man's house, the big one.'
big-gen-obj

[37] When an NP bears *-ta*, *-man* or another case other than *-qpa* 'genitive', Lefebvre and Muysken [21, p.111] treat it as part of the word; its case features percolate to the maximal projection, from which position "the case marker has scope over the whole noun phrase". *-qpa* 'genitive' may occupy CASE, thus "c-commands all the material in the NP, and thus again has scope over the whole NP."

[38] I am assuming that the moved NP adjoins to the sentence node. We could just as well adjoin it to the VP in these examples.

The same phenomenon appears in movements out of a sensory verb complement. Assume that the arguments of a sensory verb complement are generated internal to the complement and that move-α accounts for the cases in which an argument occurs in the higher clause.[39] When the subject moves, it acquires a copy of *-ta*, the COMP through which it passes:

(27) a. Hwan rikaran [$_{PP}$[$_{SN}$ Tumas wamra-n-ta maqaykaq] -ta]
b. Hwan Tumas$_k$-ta rikaran [$_{PP}$[$_{SN}$ t$_k$ wamra-n-ta maqaykaq] -ta]
John Tom-obj saw son-3p-obj hitting -obj
'John saw Tom$_k$ hitting his$_k$ son.'

Likewise, when *wamra-n*, the object of the complement, is moved out as in 28, it gets *-ta*:

(28) Hwan [wamra-n]$_j$ -ta rikaran [$_{PP}$[$_{SN}$ Tumas t$_j$ maqaykaq] -ta]
John [son-3p] -obj saw Tom hitting -obj
'John$_j$ saw Tom hitting his$_j$ son.'

If the entire PP *wamra-n-ta* were moved, we should get multiple *-ta*'s on *wamra-n*, one being the original object marker, the other a copy of the COMP through which it moves. However, I assume that only the NP *wamra-n* moves; the stranded P simply atrophies. This gives another argument that *wamra-n-ta* should be analyzed as [$_{PP}$ [$_{NP}$ *wamra-n*][$_{P}$ *-ta*]]: if *wamra-n-ta* were a single word we would not expect the independence of the NP that follows from the prepositional status of *-ta*.

4.2 Object complements

muna- 'want' takes two types of object complement, illustrated in 29 and 30:

(29) Hwan Marya noqa-ta muɕha-ma:-na-n-ta muna-ra-n 'John wanted Mary to kiss me.'
John Mary me-obj kiss-1obj-sub-3p-obj want-pst-3

(30) Hwan noqa-ta mucha-ma:-y-ta muna-ra-n. 'John wanted to kiss me.'
John me-obj kiss-1obj-inf-obj want-pst-3

The phrase markers of 29 and 30 are diagrammed in Figure 7. In 29, *muna-* 'want' selects complements substantivized with *-na*-POSS-*ta*. Consequently, *-ta* is not a barrier for *-n* '3p' and *-n*'s governing category is the main clause. Since *-n* is pronominal, it cannot be bound in this domain. Therefore it cannot be coreferential to the (c-commanding) subject of the main clause; indeed, the subjects of such complements never co-refer to the subject of the superordinate clause.

Likewise, in 30 the complement is selected by *muna-*, so *-ta* is not a barrier between *-y* 'inf' and the main clause. Since *-y* is anaphoric, it is bound by the subject of the higher clause. This accounts for the same-subject behavior of infinitive object complements.

We can now understand some interesting cases, like the contrast illustrated in 31:

[39] I question this assumption in section 8.4.

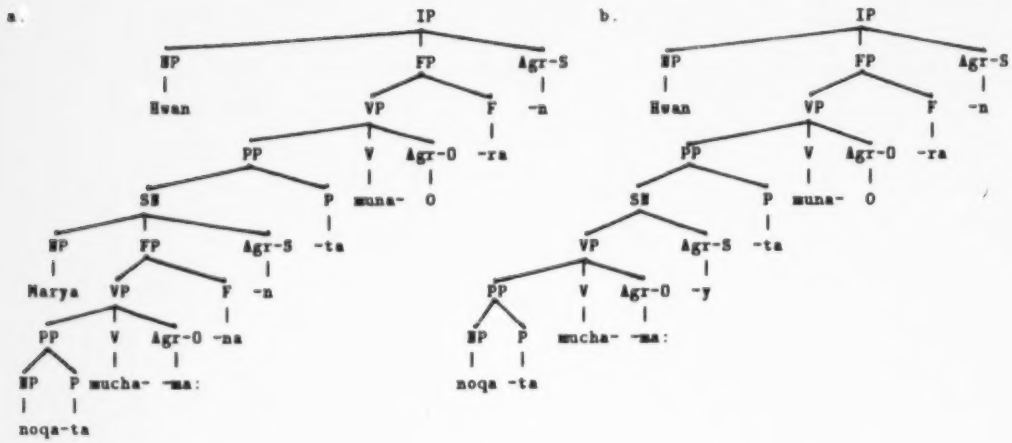

Figure 7: Object complements

(31) yanuku-na-n { a. -ta (obj) / b. -paq (pur) } muna-n
cook-sub-3p { / } want-3

'He$_j$ wants { a. him$_{i \neq j}$ to cook it / b. it so that he$_{i/j}$ can cook it } .'

In 31a, *-n* '3p' may not be coindexed with the subject of the higher clause, whereas in 31b it may. How can we explain the difference? In 31a the complement is selected by the verb, so [$_{S'}$ S [$_C$ -ta]] is not a barrier between the Agr-S of the subordinate and main clauses, so the pronoun *-n* '3p' may not be bound by the subject of the main clause. By contrast, in 31b the subordinate clause is *not* selected by the verb. Rather, it is simply adjoined to the VP. Consequently [$_{S'}$ S [$_C$-paq]] *is* a barrier between the Agr-S of the subordinate and main clauses. This allows the pronoun *-n* '3p' to be coindexed with the subject of the higher clause (as this does not constitute binding within the restricted locality).

Now consider 32. The possessive suffix following *-sh(q)a* may or may not be coindexed with the subject of the higher clause:

(32) Hwan$_j$ musya-n$_j$ qeshya-yka-sha-n$_j$-ta. 'John$_j$ knows that he$_{j/k}$ is sick.'
John know-3 sick-impf-sub-3p-obj

I believe that this is because verbs like *musya-* 'know (a fact)' do not select a clausal object, even though a substantive clause (subordinated with *-sh(q)a* or *-na*) may occur as the direct object. Since *musya-* does not select the complement, *-ta* is a barrier, so coindexing the pronominal possessive suffix with the higher subject is possible but not required. This also explains some other facts about *musya-*:

1. The complement is not obligatory; one can simply say *mana-mi musya-:-chu* 'I don't know.'

2. *musya-* does not allow raising out of the complement: **Juan-ta musya-: wamra-n-ta maqa-sha-n-ta* 'I know that John hit his son', **Maqa-sha-n-ta musya-ma-nki* 'You know that he hit me'.

3. *musya-* may not take an object complement with *-y* 'inf' or *-q* 'sub':

(33) *aywa- go { -y (inf) / -q (sub) } -ta obj musyan he knows

-y 'inf' and *-q* 'sub', which are anaphors, are separated by a barrier from any possible binder.

5 Possessives

There are two sets of person marking suffixes, the verbal person markers and the possessives (−verbal); see 1. One justification for distinguishing [+verbal] and [−verbal]

	+verbal	−verbal
1	-:	-: ∼ -ni:
2	-nki	-ki ∼ -niki ∼ -yki
3	-n	-n ∼ -nin
12	-nchi:	-nchi: ∼ -ninchi:

Table 1: Person markers

sets is that, following an underlying long vowel, the [+verbal] suffixes "foreshorten" (i.e., they suppress the length of the preceding vowel) whereas the [−verbal] suffixes have allomorphs with *-ni*; see Weber [42, p.465]. This is morphophonemic evidence for the distinction.

Another justification for the distinction—a distributional one—is that the [+verbal] suffixes fill the Agr-S of finite clauses (34d), while the [−verbal] suffixes fill the Agr-S of adverbial clauses (34c), substantival clauses (34b) and the Agr-P of possessed noun phrases (34a). Since these are all [−nominal], the feature system nicely captures this distribution.

(34) a. qam-pa wasi -ki 'your house' [−verbal] in Agr-P[40]
b. qam rika-sha -yki 'that you saw' [−verbal] in Agr-S in SN
c. qam rika-pti -ki 'if you see' [−verbal] in Agr-S in SA
d. qam rika- -nki 'you see' [+verbal] in Agr-S in S

I represent the category of the possessive suffix in a possessed NP as Agr-P. Let us now consider the question, To what extent is Agr-P like Agr-S?[41]

[41] It seems possible to assimilate Agr-P to Agr-S much more in CzQ than in HgQ; see Lefebvre and Muysken [21].

1. I assume that a possessed noun phrase is not headed by the Agr-P but by the noun (phrase) being possessed. (This is unlike the case for sentences, which I assume to be headed by Agr-S.)

2. A possessed noun (e.g., *wasi-ki*) may occur with an overt possessor. The possessor occupies the NP's specifier position, while modifiers are adjoined to N^1:[42]

   $[_{N''}[_{PP}[_{N''}$ qam$]$ $[_{P}$ -pa$]]$ $[_{N'}[_{N''}$ hatun$]$ $[_{N'}[_{N}$ wasi$]]]$ $[_{Agr\text{-}P}$ -ki$]]$

3. The possessor agrees in person with the possessive suffix;[43] I assume this agreement is implemented by whatever mechanism coindexes subject NP's with Agr-S.

4. The possessor is a prepositional phrase.[44] It is not subject to Emonds' "subject principle" because it is not an *argument* of N external to N′.

5. Unlike Agr-S, which assigns Case to the subject NP, Agr-P does not assign Case to the possessor NP. Case is assigned by the preposition *-pa* 'genitive'.

6. Agr-S's are pronouns ([+pronominal,−anaphoric]) whereas Agr-P are "mildly" anaphoric; see section 5.2.

The differences discussed in this section are summarized in Table 2.

	Agr-S of			Agr-P of
	S	SA	SN	NP
morphological:	+verbal	−verbal		
binding:	pronouns, i.e., [+pronominal,−anaphoric]			"mildly" anaphoric
overt argument:	$NP_{nominative}$			$PP_{genitive}$

Table 2: Person marker alignment

[42] An overt possessor may not co-occur with a determiner; e.g., **chay Hwanpa wamran* 'that John's child' or **huk Hwanpa wamran* 'one (of) John's children'. Determiners *do* occur with other modifiers; e.g., *chay hatun wasi* 'that big house'.

[43] *qam-pa wasi-ki* 'your house' but not **noqa/qam/noqanchi/pay-pa* (my/your/our) *wasi-ki* (house-2p).

[44] The non-human possessor of a spatial noun does not bear *-pa* 'genitive'; e.g., *wasi hana-n-chaw* (house top-3p-loc) 'on top of the house'. In this case the possessor is an NP and not a PP.

5.1 The person of possessed noun phrases

When most nouns are possessed the result is third person; for example, in 35, *ti:yu* possessed by any person makes a third person NP, as shown by the fact that the possessive suffix on *wasi* must be third person:

(35) ti:yu- [-: / -nchi: / -yki / -n] -pa wasi- [*-: / *-nchi: / *-nki / -n] ‘ [my / our / your / his] uncle’s house.’

If suffixes head the expressions they form (as claimed in Weber [41]), how do we explain that *qam-pa wasi-ki* ‘your house’ is third—not second—person? That is, why does the second person feature of *-yki* ‘2p’ not determine the person of the NP?

This would be the case if the NP were projected from Agr-P, parallel to S (=IP) being projected from Agr-S. However, I assume that possessed NP’s are projected from the head noun, not from Agr-P. I further assume (somewhat tentatively) that the entire NP is coindexed with the head: $[_{NP}(PP_{GEN})\ [N^{\alpha}_{k}]\text{-Agr-P}]_{k}$.

The binding properties of the noun to which a possessive suffix attaches may vary. Most nouns are R-expressions so—to remain free—resist binding by the possessive suffix. That is why *wasi-ki* (house-2p) is third person rather than second.

A few lexical nouns are anaphors; e.g., *kiki* ‘self’. *kiki* is always bound by the possessive suffix that follows it, so the entire NP is coindexed with the possessive suffix. For example, *kiki-ki* ‘you yourself’ is second person.[45]

Although *kiki* is an anaphor, *kiki* and a following possessive suffix together form an R-expression, *not* an anaphor. Thus it may be the subject, as in 36b, because in this position it is free—as must be the case for an R-expression. However, *kikin* cannot be the object, as in 36a, because it would be bound by the subject (pro):

(36) a. *pro kiki-n-ta wañu-chi-ku-sha. ‘He killed himself.’
b. Kiki-n wañu-chi-ku-sha.
self-3p self-3p-obj die-caus-ref-3perf

Likewise, both sentences in 37 are ill-formed because an R-expression is bound: *Hwan* in 37a and *kikin* in 37b:[46]

(37) a. *kiki-n Hwan-ta wañu-chi-ku-sha ‘John killed himself.’
b. *Hwan kiki-n-ta wañu-chi-ku-sha

Other anaphoric nouns are *huk* ‘one/another’, *ishkay* ‘two’ (and the other lower numbers) and *waki(n)* ‘some/other’, *mayqa(n)* ‘which’. Unlike *kiki* ‘self’, when each of these is possessed, it may either refer to a member of the set referred to by the

[45] Evidence for this is that it necessarily triggers second person subject agreement: *Kiki-ki aywa-nki* (2) ‘You go’ is fine, but neither **Kiki-ki aywa-:*(1), nor **Kiki-ki aywa-nchi*(12), nor **Kiki-ki aywa-n*(3) is grammatical.

[46] Felix Cayco’s reaction “It is as though someone else killed John.”

possessive suffix[47] (in which case the expression has the person of the possessive suffix) or to a member *of the complement* of that set (in which case the expression is third person). For example, *mayqa-niki* can mean 'which of you' (second person) or 'which one other than you' (third person):

(38) Mayqa-ni-ki-taq rura- {a. -sha (3perf) / b. -shka-nki (-perf-2)} ? 'Which of you did it?'
which-ø-2p-? do

Thus, the semantic interpretation of such expressions is not a direct translation of the indices.[48]

Noun phrases headed by anaphoric nouns may not have an overt possessor: **qam-pa kiki-ki* (you-gen self-2p), **qam-pa mayqan-niki-pis* (you-gen which-2p), etc. This can be explained in terms of binding properties. Compare the structure and coindexing with a possessed non-anaphoric (a) and anaphoric (b) noun:

(39) a. $[_{NP}$ qam$_j$-pa $[_{N^1}$ wasi$_k$ -ki$_j$ $]_k$] 'of you, your house'
b. * $[_{NP}$ qam$_j$-pa $[_{N^1}$ kiki$_j$ -ki$_j$ $]_j$] 'of you, your self'

The difference follows from two facts: (i) *qam* effectively c-commands the N^1; see footnote 50. (ii) N^1 is an R-expression (whether or not the head is anaphoric). 39a is fine because *qam-pa* is not coindexed with N^1 and therefore does not bind it. 39b is ungrammatical because *qam-pa* is coindexed with N^1 and therefore binds it, violating Principle C.

5.2 Possessive suffixes are "mildly" anaphoric

All things being equal, possessive suffixes are coindexed with the closest compatible c-commanding nominal expression (where "compatible" means there is no conflict of person). However, unlike anaphors subject to Principle A, possessive suffixes may not be bound in their governing category. For this reason I call them "mildly anaphoric". For example, consider 40:

(40) Hwan {a. -ø / b. pay-pa (he-gen)} warmi-n-ta kuya-n
John wife-3p-obj love-3

'John$_j$ loves his {a. j/k / b. *j/k} wife.'

[47] I am assuming that the semantic interpretation of person marking suffixes is in terms of sets. For example, for first person the set would be {SPEAKER}, for first person plural inclusive the set would be {SPEAKER, HEARER}, for first person plural exclusive the set would be {SPEAKER, X, Y,...}, etc.

[48] I assume this to be a matter of semantic interpretation, not of contra-indexing, which would require us to say that the noun is either an anaphor or an R-expression. (But, by our explanation below, those that are R-expressions should allow overt possessors.)

It may be significant that the alternate interpretations possible with these nouns, i.e. either third person or the suffix's normal value, parallels the DIP; see section 3.1.

40a would normally be taken to mean that John loves his own wife—not because men normally love their wives, but because the closest possible c-commanding nominal expression is *Hwan*. 41 provides further evidence:

(41) Hwan wa:ka-n-ta suwa- {a. *-ø / b. -pa (ben)} -n 'John steals his cow.'
John cow-3p-obj steal 3

41a is not acceptable because one cannot steal one's own cow,[49] so—out of context—there is no binder for *-n* '3p'. Adding *-pa:* 'benefactive', as in 41b, makes available a possible binder, namely the object of the benefactive. Therefore 41b is grammatical.

Arg-P are always bound by their overt possessor (if any). For example, in 40b the Agr-P *-n* '3p' is bound by *pay*, which, since it is pronominal, may not be bound by the subject.[50] This presumes that the possessor's NP c-commands the possessive suffix. Recall that the configuration is $[_{NP}[_{PP}\ NP_i\ P]\ldots \text{Agr-P}_i]$. Since PP is a maximal projection, NP does not c-command Agr-P. There are various ways we might get around this:

- Elsewhere it is argued that *-pa* 'GEN' is in some ways transparent when it comes to binding processes, so it is not unreasonable to think that the PP does not block this c-command relation.

- In contrast to cases where *-pa* assigns a θ-role, we might take such cases to be simply a suffix, not a preposition. How might this be justified? First, I think that no verb subcategorizes for *-pa*-marked complements, so not taking *-pa* as a preposition does not undercut our claim that P=COMP. Second, of the case markers, *-pa* seems the most disposed to merge with other suffixes; witness *-yllapa* and *-nawpa*. Third, taking *-pa* as simply a suffix would make Case assignment more parallel between Agr-S and Agr-P, i.e., both assign Case to an NP, nominative in the case of Agr-S and genitive in the case of Agr-P. However, one argument to the contrary is my claim that *hatun* escapes from the NP in 25 through the postposition *-pa*.

I will now give a rather extended discussion based on sensory verb complements. In the complements to sensory verbs (section 2.3), the subject or the object of the complement can occur in the higher clause. (In section 8.4 I consider the possibility that move-α is responsible for these alternatives.) This, coupled with HgQ's rather free word order makes it possible to say "John saw Tom hitting his child" a couple dozen different ways. I conducted a brief study based on speakers' reactions to many alternatives, asking whether *his son* referred to *John's* son or *Tom's* son. For

[49]Insurance has made this an attractive possibility in the "modern" world, but this fact hasn't yet come to bear on *suwa-*.

[50]This raises the question, "When an overt possessor is not present (as in 40a), might the NP's specifier be filled by an empty category, one which has the "mildly" anaphoric properties ascribed to the possessive suffixes?" I do not know the answer to this question. For present purposes, I assume that when the possessor is not physically present, the specifier is empty.

some sentences there was definite consensus; for others opinions diverged; For some speakers, the answer could go either way, while for others it was hard to make any judgment. But collectively the judgments were instructive.

In 42 *wamran* clearly refers to Tom's son; the *-n* of *wamra-n* refers to *Tumas*, as indicated by the subscripted index. The structure is given in Figure 8.

(42) Hwan Tumas$_i$ wamra-n$_i$-ta maqa-yka-q -ta rika-ra-n
John Tom child-3p-obj hit-impf-sub obj see-pst-3
'John saw Tom hitting his child.'

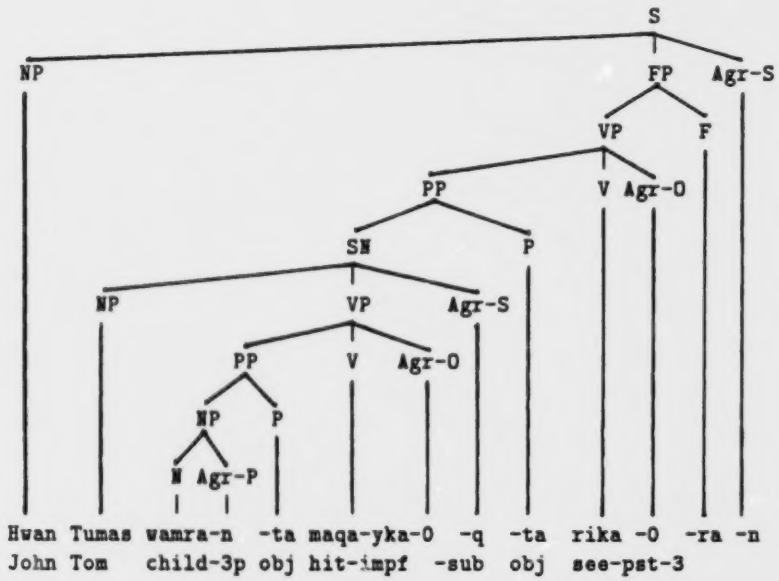

Figure 8: John saw Tom hitting his child.

Likewise, for examples 43 and 44 *-n* clearly refers to *Tumas*:

(43) Hwan rika-ra-n [Tumas$_i$ [wamra-n$_i$-ta maqa-yka-q-ta]]

(44) [Tumas$_i$ [wamra-n$_i$-ta maqa-yka-q-ta]] rika-ra-n Hwan.

But in 45, where *wamra-n* occurs in the main clause[51] it refers to John's son:

(45) Hwan$_i$ wamra-n$_i$-ta$_j$ rika-ra-n [Tumas [e$_j$ maqa-yka-q-ta]]

Based on these examples, we can formulate a tentative generalization:

[51]The *j* subscript reflects an analysis whereby *wamra-n-ta* has moved from the lower to the higher clause, receiving its θ-role by virtue of the coindexed trace in the lower clause.

(46) The *-n* of *wamra-n* preferentially refers to the subject of the clause in which it occurs.

Among the sentences I asked speakers to judge, some were structurally ambiguous. For these, the respondents split fairly evenly over whether *wamra-n* referred to John's or Tom's son, and some respondents indicated that it could be either. One such sentence is given in 47 and 48; these have the same terminal string, differing only in the structure and indices I have added:[52]

(47) Hwan$_i$ [$_{VP}$ rika-ra-n [wamra-n$_i$-ta]$_j$ [Tumas e$_j$ maqa-yka-q -ta]]

(48) Hwan [$_{VP}$ rika-ra-n [wamra-n$_i$-ta Tumas$_i$ maqa-yka-q-ta]]

Consistent with 46, in these cases the reference of the *-n* of *wamran* depends on whether *John* or *Tom* is the subject of the clause in which *wamra-n* occurs. Another example follows:

(49) a. Hwan$_i$ [wamra-n$_i$-ta]$_j$ [Tumas e$_j$ maqa-yka-q-ta] rika-ra-n
b. Hwan [wamra-n$_i$-ta Tumas$_i$ maqa-yka-q-ta] rika-ra-n

Now let us consider a different case. When *Tumas* is the direct object of the matrix clause, *wamran* refers preferentially to Tom's son:[53]

(50) Hwan [Tumas$_i$ -ta [rika-ra-n [e$_i$ [wamra-n$_i$ -ta maqa-yka-q -ta]]]]

In 50, *-n* is coindexed with the closest c-commanding NP, the empty subject of the subordinate clause, which in turn is coindexed with *Tumasta* in the higher clause. Similar examples follow:

(51) Hwan Tumas$_i$-ta [e$_i$ wamra-n$_i$-ta maqa-yka-q-ta] rika-ra-n
John Tom-obj son-3p-obj hit-impf-sub-obj see-pst-3

(52) Hwan rika-ra-n Tumas$_i$-ta [e$_i$ wamra-n$_i$-ta maqa-yka-q-ta]
John see-pst-3 Tom-obj son-3p-obj hit-impf-sub-obj

(53) Tumas$_i$-ta rika-ra-n [e$_i$ wamra-n$_i$-ta maqa-yka-q-ta] Hwan
Tom-obj see-pst-3 son-3p-obj hit-impf-sub-obj John

(54) Tumas$_i$-ta rika-ra-n Hwan, [e$_i$ wamra-n$_i$-ta maqa-yka-q-ta]
Tom-obj see-pst-3 John son-3p-obj hit-impf-sub-obj

[52] I assume somewhat simplistically, that *wamra-n* can be a member of the higher clause if it is adjacent to other elements of that clause. I will not be unduly concerned about its structural relationship to the higher clause.

[53] When *Tumas* escapes the lower clause, it gets a copy of the preposition, i.e., COMP, through which it passes. I assume *Tumas-ta* is adjoined to the VP and does not receive a θ-role from the verb of the higher clause.

In conclusion, the simple generalization of 46 covers many (perhaps all) cases, namely, *-n* '3p' (as in *wamra-n* 'his son') refers to the closest c-commanding noun phrase.[54]

In all the examples above, if we replace *wamra-n* 'his son' by *pay-pa wamra-n* 'of him, his son', we force exactly the opposite reference. For example, compare 55 with 44:

(55) [Tumas$_i$ pay$_{j \neq i}$-pa wamra-n$_j$-ta maqa-yka-q-ta] rika-ra-n Hwan$_j$.
'John$_j$ saw Tom$_i$ hitting his$_{j \neq i}$ son.'

In 55, *pay*'s governing category is the entire subordinate clause. Since *Tumas* c-commands *pay* in that domain, *pay* cannot be coindexed with *Tumas* without violating Principle B. Therefore, *pay* must refer to *Hwan* or to some other person.[55] And the *-n* of *wamran* is coindexed with *pay*, so cannot refer to *Hwan*: *pay$_j$-pa wamra-n$_j$* 'his$_j$ son' can only refer to someone's son other than John's.

5.3 Null first person plural inclusive subjects

Consider the following sentence from Cayco [3, p.2]):

(56) Chay la:sa-chaw ima mikuy-kuna-ta ranti-q-kuna allapa
that market-loc what food-plur-obj buy-sub-plur excessively

bara:tu ranti-y-ta muna-ma-sha-ø-qa aywa-y-ø-paq Ministeryu
cheap buy-inf-obj want-1(2)obj-advds-12p-top go-inf-12p-pur Ministry

de Agrikultura-pa dispa:chu-man rasun-pa risyun ka-q-ta
of Agriculture-gen office-goal real-gen price be-sub-obj

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[54]There is only one apparent counterexample among the many possible ways to say 'John saw Tom hitting his son':

?Hwan$_i$ [[[e$_i$ wamra-n$_i$-ta maqa-yka-q-ta] rika-ra-n] Tumas$_{j \neq i}$-ta]

It seems that the immediate precedence of *Hwan*—coupled with the great distance of *Tumasta*—encourages coreference with *Hwan* rather than *Tumas*. I am not troubled by this case because it is probably not well-formed; speakers find it very strange. It seems to be a "garden path" sentence: If it were to end right after *rikaran*, it would be a perfectly natural way to say 'John$_i$ saw him$_j$ hitting his$_i$ son'. The analysis would be as follows: Hwan$_i$ wamra-n$_i$-ta$_k$ [[pro$_j$ e$_k$ maqa-yka-q-ta] rika-ra-n] When *Tumas-ta* is then encountered, it is most naturally interpreted as adjoined to the verb phrase: Hwan [$_{VP}$[$_{VP}$ wamra-n-ta [[pro e maqa-yka-q-ta] rika-ra-n]] Tumasta] By the generalization that covers all the other cases, the *-n* of *wamran* should be coindexed with the closest c-commanding NP, which would be *Tumasta*. Apparently, however, its coindexation to *Hwan* is—by the time *Tumas-ta* is encountered—sufficiently entrenched to resist change.

[55]As an isolated sentence, *pay* naturally refers to *Hwan*; this is probably because it is the only other referent in this limited context.

musya-na-ø-paq, ranti-na-ø-paq-pis, rantiku-na-ø-paq-pis.
now-sub-12p-pur buy-sub-12p-pur-indef sell-sub-12p-pur-indef

'If those who buy all sorts of food in the market want to buy from us at too low a price, we should go to the Ministry of Agriculture's office to know what the price really is for buying and for selling.'

In this sentence, there are three types of use of -ø '12p' (first person plural inclusive possessive): the first with *-sha-ø*, the second with *-y-ø-paq*, and the third with *-na-ø-paq*. In each of these -ø '12p' is in Agr-S' and—as expected—acts like a pronoun. I will now discuss these three in turn.

5.3.1 -ø '12p' following *-sha* 'advss'

-sha forms adverbial clauses, the subjects of which are always first person plural inclusive; these never co-refer with the subject of the superordinate clause. I analyze this as an adverbializer *-sha* followed by -ø '12p'. Since the latter is a pronoun, the different-subject property follows from Principle B, as discussed in section 6. We now consider various examples.

In examples 57 and 58, the subject of the subordinate clause is first person plural inclusive and that of the main clause is third person:

(57) Llapan chay-kuna-ta rura-sha-ø-qa marka-nchi limyu-na.
all that-plur-obj do-advds-12p-top town-12p clean-now
'If we do all that, our town (will be) clean now.'

(58) ... mas huk la:sa-pis ka-yka-n-mi mayu-pita chimpa-man pa:sa-sha-ø-qa.
another market-even be-impf-3-dir river-abl other side-goal pass-advds-12p-top
'...there is another market when we cross to the other side of the river.'

In examples 59 and 60 the subjects of the main and subordinate clause both superficially appear to be first person plural inclusive, contrary to the claim that *-sha* always involves a different subject. However, in both cases the subject of the main clause is really third person (as explained in section 3) because *-nchi:* and *-shun* have the DIP.

(59) Chay yayku-sha-ø-raq-mi mediku rika-ma-nchi kwirpu-nchi:-ta.
that enter-advds-12p-yet-dir doctor see-1(2)obj-12 body-12p-obj
'Not until we go in there does the doctor look at our body.'

(60) Chay-naw ligi-y-ta alli yacha-sha-ø-qa mana-na-mi pi-pis
that-sim read-inf-obj well know-advds-12p-top not-now-dir who-indef

llullapa:-ma:-shun-chu ima-ta-pis.
cheat-1(2)obj-12fut-neg what-obj-indef

'If we know how to read well like that, no one can cheat us out of anything any more.'

Like *-nchi:* '12p', -ø '12p' also has the DIP. For example, in 61 and 62, the -ø '12p' in *rura-ma-sha-ø* and *pa:sa-ma-sha-ø-pis* (respectively) is interpreted as '3' because to interpret it as '12' would violate Principle B:

(61) Chay-naw rura-ma-sha-ø huk-lla tapuku-shun chay wardiya-kuna-ta.
that-sim do-1(2)obj-advds-12p one-just ask-12fut that police-plur-obj
'If they do that to us, we should ask those police right away'

(62) ... chay-naw noqanchi willa-sha-ø-qa, pay yanapa:-ma-nchi
that-sim we(incl) tell-advds-12p-top he help-1(2)obj-12

ima pa:sa-ma-sha-ø-pis.
what happen to-1(2)obj-advds-12p-indef

'...when we tell that, he helps us, no matter what has happened to us.'

See also examples 79, 80 and the examples of Weber [42, p.300].

-ø '12p' is not limited to HgQ. 63 and 64 are from Huaylas (Ancash) Quechua (courtesy of Mike Miller):[56]

(63) Tapuka-ma-shqa-ø rason ka-q-ta willa-shun.
ask-1(2)obj-advds-12p true be-sub-obj tell-12fut
'When they ask us, we should tell the truth.'

(64) Ama penqaku-shun-tsu nuna-kuna ashma-ma-shqa-ø.
not be ashamed-12fut-neg man-plur insult-1(2)obj-advds-12p
'Let's not be ashamed if people insult us.'

See also [42, p.300, footnote 3]

Examples 65 and 66 are from Huanca Quechua (courtesy of Rick Floyd):[57]

(65) Chala-ma-chwan čhawa yaku-kta upya-šha-ø-m,
grab-1obj-12cond uncooked water-obj drink-advds-12p-dir

mana suma čhašha-šha mikuy-kuna-ta miku-šha-ø-m.
not well cook-prtc food-plur-obj eat-advds-12p-dir

'It (cholera) may strike us if we drink unboiled water or eat food that hasn't been completely cooked.'

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[56] Stewart[32, p.133, ex.23] gives the following example:

... muru-ku-sha-pis ima-pis ka-n-tsu.
plant-ref-prtc-even what-even be-3-neg
'...although we planted, there isn't anything' (Stewart's gloss was '... there isn't anything of all that we planted')

This looks like a case of -sha-ø (-sub-12p), but the context implies that its subject is not first person plural *inclusive*, but *exclusive*. I do not know why.

[57] *čh* and *šh* represent the retroflexed variants of *ch* and *sh* respectively.

(66) Lika-pa:ka-ma:-shun-si ... mana yacha-sha-ø.
look-plur-1obj-12fut-even not know-advds-12p
'They'll look at us ... because we do not know (what to do).'

The following is from Cajamarca Quechua (Quesada [30, p.88]):

(67) Chay puyñu-qa-m paki-ra-n llamka-shqa-ø-qa.
that jug-top-dir break-past-3 touch-advds-12p-top
'That jug broke when/because we touched it.'

Given that *-sha* forms adverbial clauses with a different subject, how does this *-sha* fit into the morphology? Rather than positing an independent suffix, it would be nice to see it as a case of some suffixes already posited. One suffix with the form *-sha* is the substantivizer used in relative clauses, e.g., *miku-sha-n aycha* (eat-sub-3p meat) 'the meat which he ate'. The category of *-sha* 'sub' is [+nominal,−bivalent] ; see Weber [41]. *-sha* 'advds' can be admitted by generalizing this to [−verbal,−bivalent], counting on -ø '12p' to make the valence [+complete].[58]When [−verbal] is further specified as [+nominal], a substantival clause results; when it is further specified as [−nominal], an adverbial clause results. I do not know why other possessive suffixes may not follow *-sha* in this adverbial use.

5.3.2 -ø '12p' with *-y...-paq* 'we(incl) should'

A verb inflected with *-y...-paq* (-inf-pur), may stand as the verb of a main clause, meaning 'we(incl) should...'. This is unusual in that the verb is substantivized and case-marked. However, it is understandable if we recognize that *...-y-paq* is the complement to an implicit *ka-n* (be-3) 'it is'. (*ka-n* is systematically suppressed in predicate complement constructions.)

Even recognizing that *-y-paq* is the complement of *ka-n*, there is no apparent binder for the anaphor *-y*, which I claim in section 7 is an anaphor. I propose that it is bound by -ø '12p'. Thus, the analysis of *reqi-y-paq* 'we should recognize him' is *reqi-ø$_j$-y$_k$-ø$_k$-paq (ka-n$_i$)* (recognize-obj$_j$-inf$_k$-12p$_k$-pur (be-3$_i$)), which we might paraphrase as 'the obligation$_i$ exists for us$_k$ to recognize him$_j$'. Because -ø '12p' is the only possessive suffix that could be between *-y* and *-paq* (none of the others having a null allomorph), it is always interpreted as 'we(incl) should'. Examples follow:

(68) Chay-naw suwa-pa:-ma-sha-ø-qa sumaq reqi-y-ø-paq chay suwa-ta.
that-sim steal-ben-1(2)obj-advds-12p-top well know-inf-12p-pur that thief-obj
'If someone steals from us like that, we should recognize that thief very well.'

[58]There is another possibility, namely *-sha* 'participle': *Miku-sha-ta tari-shka-:* (eat-prtc-obj find-perf-1) 'I found it eaten.' This *-sha*'s category is [+nominal,+complete]. If we do not count on -ø '12p' to complete the word, generalizing this category to [−verbal,+complete] admits the adverbializing *-sha*. However, in this case there is no clear correspondence between the meaning of *-sha* and the category; for [+nominal] it is third person but for [−nominal] it is first person plural inclusive.

(69) Ministeryu de Agrikultura-man manacha:qa Konsehu Munisipal-man,
ministry of agriculture-goal otherwise council municipal-goal

ima-pita-pis alla:pa chanin-ta maña-ma-sha-ø-qa willa-y-ø-paq.
what-abl-indef excessive price-obj ask-1(2)obj-advds-12p-top tell-inf-12p-pur

'If for anything they ask for too much (money), we should inform the Ministry of Agriculture or otherwise the Municipal Council.'

In Cuzco, the use of -ø with *-y...-paq* is not limited to first person plural inclusive. Lefebvre and Muysken [21, p.30] give the following example, to which I have added -ø 'PRO':

(70) Ancha mikhu-y-ø-paq allin. 'very good to eat' (lit. 'very good for us(incl) to eat')
very eat-inf-PRO-pur good

I have not found DIP effects with *-y...-paq* (as found in the other environments where it occurs). For example 71a is ungrammatical. I do not know why.

(71) aru-pti-nchi pa:ga-ma(:)- {a. *-y-ø-paq (-inf-12p-pur) / b. -shun (-12fut)}.
work-advds-12 pay-1obj-
'If we work, he should pay us.'

5.3.3 -ø '12p' with *-na...-paq* 'in order that we(incl)'

Purpose clauses with *-na-POSS-paq* where *POSS* is an explicit possessive suffix are common. Sometimes, however, these occur without an explicit possessive suffix. They act as though they had an explicit possessive suffix *-nchi:* '12p'. I analyze them as having -ø '12p'. Examples follow:

(72) Chay-chaw pa:ga-yku-sha-ø-qa huk-kaq papil-ta-qa qu-yka-ma-nchi,
that-loc pay-in-advds-12p-top one-def paper-obj-top give-in-1(2)obj-12

may-man-pis apa-na-ø-paq.
where-goal-indef take-sub-12p-pur

'When we(incl) have paid that there, they give us another paper for us to take wherever (we go).'

(73) Chay-naw ima-pis pa:sa-ma-sha-ø-qa huk-lla aywa-nchi
that-sim what-indef happen-1(2)obj-advds-12p-top one-just go-12

chay awturida:-man willa-na-ø-paq.
that authority-goal tell-sub-12p-pur

'If anything like that happens to us, we should go right away to tell that authority.'

Like *-nchi:*, -ø '12p' has the DIP discussed in section 3. For example, in 74 the -ø '12p' in *rispita-chi-ma:-na-ø-paq* is interpreted as '3' because to interpret it as '12' would violate Principle B:

(74) Pay-mi ka-yka-n Gubirnu-pa ruka-n ima-paq-pis llapan-paq
he-dir be-impf-3 president-gen replacement-3p what-pur-indef all-pur

pi: ima-ta rura-sha-ø-pis llapan-ta rispita-chi-ma:-na-ø-paq.
who what-obj do-advds-12p-indef all-obj obey-caus-1(2)obj-sub-12p-pur

'He (the Prefect) is the President's representative for anything and everything, to make us obey everything if any one of us does something.'

In section 6 we claim that *-r* 'advss' is an anaphor. In 75, it is bound:

(75) ... willa-ma-nchi:-mi
tell-1(2)obj-12-dir

[$_{SN}$[$_{SA}$ achka kasta wanu-kuna-ta taku-rka-chi-r$_j$] muru-na-ø$_j$-paq]
many kind fertilizer-plur-obj mix-up-caus-advss plant-sub-12-pur

'...they tell us to plant after having mixed all kinds of fertilizers'

The use of -ø '12p' with *-na...-paq* is not limited to HgQ. The following example from Cañaris (Lambayeque) Quechua (courtesy of Dwight Shaver) demonstrates the three uses of -ø '12p' described above:

(76) Inkawasi-manta shamu-ya-sha-ø, achka yaku ka-ti-n mana
Inkawasi-abl come-impf-advds-12p much water be-advds-3p not

pasa-y-ø-paq-chu ka-ra-n. Mana yaku-ta pasa-y-ø-paq ka-ti-n,
cross-inf-12p-pur-neg be-pst-3 not water-obj cross-inf-12p-pur be-advds-3p

largu waska-ta prista-ma-ra-nchik pasa-na-ø-paq.
long rope-obj loan-1obj-pst-12p cross-sub-12p-pur

'When we were coming from Inkawasi, because there was lots of water we(incl) were not able to cross it. When we were not able to cross the water, (he) loaned us a long rope so that we could cross.'

And in Cuzco Quechua, *-na-ø-paq* is frequent, but with the difference that -ø may be of any person, i.e., it is an arbitrary PRO. Lefebvre and Muysken [21, p.23] give the following example, to which I have added -ø 'PRO':

(77) Chay papa-kuna-qa mana-n allin mikhu-na-ø-paq.
that potato-pl-top not-dir good eat-sub-PRO-pur
'Those potatoes are not good to eat.'

5.3.4 Concluding remarks about -ø '12p'

I have been unable to find -ø '12p' in environments other than those discussed above. I do not know why its distribution is so limited.

I asked Teodoro Cayco, and independently his son Felix, whether 78b was grammatical. (This has a negative purpose clause, as described in Weber [38, p.115] and [42, p.293].)

(78) maqa-ma:-na- hit-1obj-sub- {a. -nchi: / b. ??-ø} -ta -obj ayqi-shun flee-12 . 'Let us flee lest he hit us.'

Both had the same reaction: It almost sounds right, but falls just short of being really acceptable. Both understood it correctly, and both suggested making the possessive explicit, i.e., using *-nchi* instead of -ø '12p'.

6 Switch reference

6.1 Finer's approach

Finer [15, p.35,6] compares switch reference to English:

(1) a. Before he left, he visited Tucson.
b. Before Bill left, he visited Tucson.
c. Before he left, Bill visited Tucson.

> ...In languages with so-called switch reference systems, however, the coreference possibilities of NP's in examples corresponding to (1) are not free, *although the structural configuration of the sentences analogous to (1) is, as far as I can tell, identical to that of the above examples.* [italics mine—DJW]

I think the italicized portion of this statement is very questionable. It is crucial to Finer's approach, but he does little to justify it. (Indeed, how could such a claim be defended universally?) Finer [14, 15] treats switch reference in terms of subordination, assuming the following structure: $[_S[_S[_S \ldots]$ COMP$]\ldots]$ Same-subject switch reference markers are treated as Ā-anaphors. Coreference with the subject of the higher clause is forced through the intervening COMP node and Principle A generalized for a Ā-binder in COMP. Different-subject markers are treated as Ā-pronominals, the disjoint reference forced by Principle B generalized for a Ā-binder in COMP. Finer [15, p.41] explicitly rejects treating switch reference in terms of simple anaphors and pronouns:

> Two factors militate against a treatment of (3)-(12) [switch reference clauses in different languages—DJW] parallel to the analysis of (16) [John$_i$ believes himself$_i$ to be Napoleon., etc.—DJW], however. First, the subjects of the embedded clauses in (3)-(12) are straight pronouns or lexical

> NPs, not anaphors. As such, they are subject to principle (B) or principle (C) and cannot be bound in their governing categories. This contrasts with the requirement that anaphors *must* be bound in their governing categories. Second, there is no c-command between the two subjects, so the whole question of binding obtaining between two coindexed NPs is irrelevant....

For HgQ I disagree with virtually all of this statement, as should become clear shortly. Finer [15, p.39, footnote 5] writes:[59]

> In many of the languages under discussion, it is quite unclear whether coordination or subordination is the operative structure (hence the alternation in the glosses). For present purposes, I will follow Gorbet(1976), who claims that SR clauses are in fact subordinate, but "loosely" so.

However, Quechua switch reference does not seem to be "loosely" subordinate, but very tightly subordinate. The difference hinges around COMP, which in Finer's analysis provides a bit of a buffer between the main and subordinate clause. For HgQ there is no evidence of a COMP node for adverbial clauses, so Finer's analysis is unmotivated. But a much simpler solution is possible for HgQ, one that makes *no* use of COMP or non-argument binding.

6.2 HgQ *-r* 'advss' and *-pti* 'advds'

The basic facts of HgQ switch reference are documented in Weber [42, chap. 14].

HgQ adverbial switch reference clauses (SA) are usually adjuncts to the verb phrase:[60]

$[_S\ (NP_j)\ [_{VP}[_{SA}\ (NP_k)\ VP\ Agr\text{-}S_k]\ [_{VP}\ldots]]\ (Agr\text{-}S_j)]$

The governing category for the Agr-S of the switch reference clause (SA) is the clause within which it is embedded, since that is the smallest domain with an accessible subject. Whether NP_k is coreferential to NP_j or not depends on the binding properties of Agr-S in SA: if it is anaphoric, $k = j$; if it is pronominal, $k \neq j$.

The same-subject switch reference marker *-r* is a simple anaphor, bound by the subject of the higher clause. Consider the structure for 'Having eaten, I left.' given in Figure 9. I withhold judgment as to whether to posit an overt subject NP for switch reference clauses. As argued above, Agr-S *is* the subject. If an overt subject NP did occur, it would be coindexed with Agr-S (by the mechanism that coindexes Agr's and the corresponding overt NP). But I explicitly reject the idea that the overt subject NP is PRO.

[59] For clause-chaining in New Guinea languages, Roberts [31] treats switch reference in terms of coordination, i.e., $[_S\ldots][_S\ldots]$.

[60] Adverbial clauses can also be adjoined directly to the verb or to the sentence as a whole.

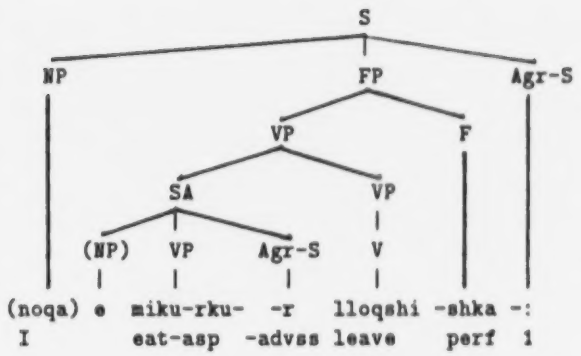

Figure 9: Having eaten I left.

In HgQ, *-r* cannot be followed by a possessive suffix. How might we account for this? Suppose that a possessive suffix were to follow (and thus bind) *-r*. This possessive suffix—a pronoun—could not be bound within the domain of the closest c-commanding subject without violating Principle B. If the clause headed by *-r* occurred in such an environment (e.g., as a VP adjunct), the possessive suffix would be disjoint in reference with the closest c-commanding subject (like clauses subordinated with *-pti*, as discussed below). If the clause did not occur in such an environment (e.g., it occurred in the COMP dominating the finite verb), the possessive suffix could be coindexed with the subject of the main verb, but this would not be required.

What these two undesirable alternatives have in common is a lack of proximity between the clause headed by *-r* and the clause it modifies. Thus, one might search for some way to lexically mark *-r* so as to require this proximity, and derive the prohibition against possessive suffixes as a result of the negative consequences just outlined. On the other hand, the simpler thing to do is simply stipulate—as a morphological property—that *-r* cannot be followed by a possessive suffix. Then, since *-r* is an anaphor, it would have to occur where it can be bound, and the same-subject behavior follows.

The different-subject adverbial clause *-pti* occupies F and is obligatorily followed by a pronoun in Agr-S. Because it is a pronominal, that Agr-S cannot be coindexed with the subject of the higher clause, as this would violate Principle B. The phrase marker for 'When Mary arrived, John left' is given in Figure 10. (As shown, the overt subject NP's of both the main and the adverbial clauses may occur, but this is somewhat unusual. Generally either one, the other, or both are empty.)

It is also possible to have adverbial clauses adjoined to the sentence as illustrated in Figure 10b. By "adjoined to S" I do not preclude that the clause has been moved to Comp, where sentences have the structure $[_{C'}$ Comp $[_{C'}$ C S]].[61]

[61] Adverbial clauses may also follow the main clause; see Weber [42, p.298, ex.1212].

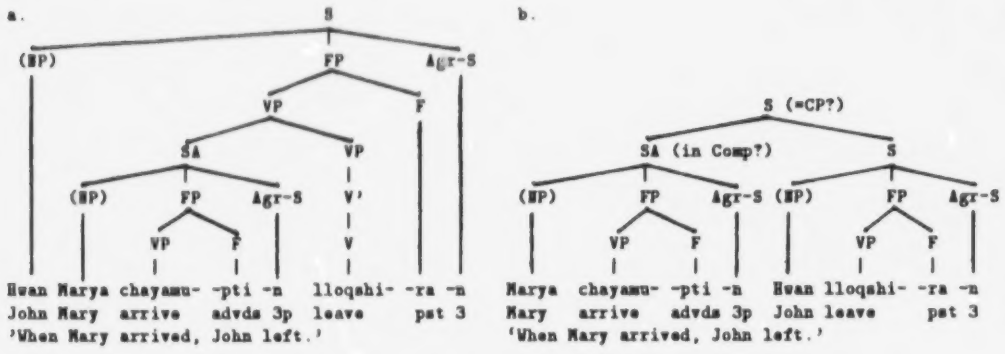

Figure 10: Different subject switch reference clauses.

Figure 10b violates no principle of the Binding Theory, but leaves unexplained why the subject of such subordinate clauses must be different than that of the main clause (which if the clause were adjoined to the VP would follow from the pronominal status of its Agr-S and Principle B). We can recover this by analyzing such adjoined clauses as having been moved from the VP: [$_S$ SA$_j$ [$_S$[$_{VP}$ t$_j$ VP]]]. For LF (where the binding principles are enforced) move-α would return them to the positions of their traces. Perhaps an argument for this is the high frequency with which *-qa* 'top', often associated with topicalized constituents, occurs on adverbial clauses.

To correctly index the Agr-S's of switch reference clauses, we must have a precise understanding of the structure of the sentence. This is not always immediately obvious. For example, consider 79:

(79) Chay-naw mana alli ka-r-mi mana hucha-yoq ka-sha-ø-pis
that-sim not good be-advss-dir not guilt-have be-advds-12p-pis

abusa-ma-nchi, mana ima-pis hucha-nchi ka-yka-pti-n.
abuse-1(2)obj-12 not what-indef guilt-12p be-impf-advds-3

'Since they are bad like that, even though we are not guilty, they abuse us, even though we are not guilty.' (literally, '...our guilt does not exist')

The structure of 79 is as follows:

[$_S$[$_S$[$_{VP}$[$_{SA}$ Chaynaw mana alli ka-r$_k$-mi] [$_{VP}$ [$_{SA}$mana huchayoq ka-sha-ø$_{12}$-pis] [$_{VP}$ abusa-ma$_{12}$-]]][$_{Agr\text{-}S}$-nchi$_k$]] [$_{SA}$ mana imapis huchanchi kayka-pti-n$_j$]]

In particular, note that the *-r* is coindexed with *-nchi*. Because *-nchi:* '12' has the DIP and c-commands *-ma:*, it is interpreted as third person. Therefore, -r$_k$ is interpreted as third person, referring to the abusers.

6.3 The adverbializer *-shpa*

Adverbial clauses formed with the same-subject adverbializer *-shpa* 'advss' behave differently in different dialects. We discuss various cases.

6.3.1 HgQ and many Central dialects

In HgQ (and many other Central dialects), *-shpa* forms adverbs which are morphologically incomplete in the sense of Weber [41]; consequently they must be followed by a possessive suffix—a pronominal clitic. However, contrary to what we expect, this suffix must be coreferential with the subject of the main clause.[62] I analyze these as follows:

In contrast to the other adverbial clauses, switch reference clauses with *-shpa* are not sisters to the VP, but sisters to the S. Therefore their subjects can be coindexed to the subject of the superordinate clause without violating Principle B because they are not c-commanded by the subject of the main clause (and thus the co-indexing does not constitute binding).

Evidence for this is that adverbial clauses with *-shpa* show less proximity (semantic and syntactic) to the event indicated by the main clause than do adverbial clauses with *-r*. For AnQ, Cole [8, p.3] writes:[63]

> The choice between the two proximate suffixes *-r* and *-shpa* is determined by whether the two clauses are viewed as describing two related events, in which case *-r* is used, or two unrelated events, in which case *-shpa* is employed.

An example from HgQ follows:

(80) Kay radyu-kuna alli ima-ta-pis oqra-shpa-nchi, chay-man aywa-yku-r
this radio-plur good what-obj-indef lose-advss-12 that-goal go-in-adv

willa-sha, rima-mu-n chay runa "oqra-paku-sha pi-pis
tell-advds12 speak-afar-3 that man lost-diffuse-prtc who-indef

tari-sha ka-r-qa kay radyu-man kuti-chi-mu-y" ni-r.
find-prtc be-advss-top this radio-goal return-cause-afar-2imp say-adv

'These radio (stations) are good for (the following): if we lose something, if—after having gone there—we tell them, that man broadcasts saying "If anyone finds what was lost, return it here to the radio". '

The relevant part of the phrase marker is as follows:

[62] Hermon [20, p.132, footnote 17] dismisses evidence for these facts presented in Weber [37].

[63] Paradoxically, Huaylas *-shpa* has the "unrelated event" reading (see quote from Cole given above) even though—I believe—it is an anaphor. Cole's characterization fits HgQ better than it does Huaylas Quechua.

(81) [$_{VP}$[$_{SA}$[$_{SA1}$imatapis oqrashpanchi] [$_{SA}$[$_{VP}$[$_{SA2}$chayman aywaykur] [$_{VP}$willasha]] [$_{Agr\text{-}S}$-ø]]] [$_{V}$ rimamun]]

The time and place of SA1=*if we lose something* is quite removed from what follows, which happens at the radio station. Thus, it is fitting that SA1 be adverbialized with *-shpa* and adjoined to the SA rather than to its VP. By contrast, SA2=*having gone* is more semantically tied to its superordinate verb, together saying *if we go and tell.* Thus, SA2 is adverbialized with *-r* and adjoined to the VP headed by *willa-* 'tell'.

The difference between AnQ *-r* and *-r-nin* may also be one of semantic proximity; example 82 (Stewart [32, p.316, 24-6]) suggests this:

(82) Ni-r-nin-qa, alli kiririkuyku-r llapi-r usha-naq.
say-advss-3p-top good chomp-advss squash-advss finish-narrpast
'So saying, really chomping it he finished squashing it.'

The first clause, with *-r-nin* is temporally and thematically removed from the sequence of the following clauses, which convey a single action of squashing (a lizard) by biting down on it.

6.3.2 Imbabura Quichua and Huaylas Quechua

In Imbabura (Ecuadorian) Quichua and Huaylas (Ancash) Quechua, *-shpa* is never followed by a possessive suffix. Morphologically, in these dialects *-shpa* makes "complete" adverbs, and thus does not require a following possessive suffix [64] *-shpa* always forms a same-subject switch reference clause.

Following Finer, Hermon [20] gives an account for these languages that treats the subject of the adverbial clause as PRO, pushing the matter into the theory of control. However a much simpler analysis is possible, that given for *-r* above: *-shpa* occupies Agr-S and is an anaphor. The clause it adverbializes is typically adjoined to the VP of the higher clause and is thus bound by the subject of that clause.

6.3.3 Pastaza Quechua

In Pastaza Quechua, *-shpa* may or may not be followed by a possessive suffix; this can be seen in the Pastaza text in Weber (ed.) [40, p.37ff].[65] With a possessive suffix, the adverbial clause has a different subject; without a possessive suffix, it has the same subject. This behavior is understandable if we take *-shpa* to be an anaphor:

- When no possessive suffix follows, *-shpa* is bound by the subject of the clause to the VP of which it is adjoined. Consequently it is a same-subject adverbial clause.

[64] This analysis is necessary for Imbabura because Ecuadorian Quichua dialects do not have possessive suffixes.

[65] Possessive suffixes are allowed after adverbializers because their subcategorization frame is [X[−verbal] __] rather than the narrower [X[+nominal] __].

- When a possessive suffix follows, *-shpa* is bound by that possessive suffix. Since that suffix is pronominal, it must not be coindexed with the subject of the higher clause. This forces disjoint reference, so that the clause is a different subject adverbial clause.

These two cases presume that the adverbial clause is adjoined to the VP. However, there is a third possibility: It might also be adjoined to the sentence. In this case, there must be a possessive suffix, since to fail to have one would leave the anaphor *-shpa* unbound. The possessive suffix could be either coreferential or non-coreferential to the subject of the sentence to which it is adjoined. In either case, we expect greater semantic distance than when the adverbial clause is adjoined to the VP. This cluster of "facts" is summarized in the following Table 3.

	$[_{VP}$ __ VP]	$[_{S}$ __ S]
without possessive	same subject, tight semantic relationship	does not exist
with possessive	perhaps do not exist[66]	same or different subject, loose semantic relationship

Table 3: Pastaza switch reference with *-shpa*

The rather complicated situation in Pastaza falls out quite directly from the assumption that *-shpa* is an anaphor.

6.3.4 Southern dialects

In some Southern dialects, e.g., Ayacucho (see Weber [40, p.169ff]) *-s(h)pa* may or may not be followed by a possessive suffix, but whether followed by one or not, the subject of its clause is coreferential with the subject of the higher clause.

When no possessive suffix follows, the adverbial clause must be adjoined to the VP of a higher clause so that *-s(h)pa*—an anaphor—can be bound by its subject. But when *-s(h)pa* is followed by a possessive suffix, *-sh(p)a* is bound by that suffix. In order that the pronominal suffix not be bound, in this case the adverbial clause must be a sister to the sentence, as discussed above for HgQ. This—I believe—results in an iconic behavior like that described above for Huallaga *-r* and *-shpa*: The presence of the pronominal clitic indicates greater semantic distance, whereas its absence implies

[66] The forms of the lower left-hand box would have a different subject but a tight semantic relationship. Crista Toetder (personal communication) regards their existence as questionable. If indeed they are not possible, this might be explained (i) on semantic grounds, on the basis that a different subject precludes semantic proximity, or (ii) as a reflection of the degree to which Ecuadorian dialects have moved from hypotactic to paratactic structures.

greater semantic proximity. See Weber [42, p.302, footnote 5] for a Cuzco Quechua example recorded by J. Loriot.

6.3.5 Concluding remarks about *-shpa*

At the heart of my account of how *-shpa* behaves in different dialects there is one commonality: *-shpa* is an anaphor. Correct predictions fall out from this and slightly different assumptions about structural configuration.

6.4 Some further cases

6.4.1 Adverbial clauses in substantivized clauses

In 83 (Weber [42, p.306]), the adverbial clause *utikar* 'when I get tired' is adjoined to the VP headed by *hama-kU-* 'sit/rest', which is subsequently nominalized:

(83) [$_{NP}$[$_{VP}$[$_{SA}$ Utika-r] hamaku-] -na -:] -paq-mi kay silleeta (kaykan).
tire-adv rest- -sub -1p -pur-dir this chair (it is)
'This chair is for me to rest on when I get tired.'

In 84, the adverbial clause *mana manchar* 'without fearing' is adjoined to the VP headed by *rura-* 'do', which is subsequently nominalized:

(84) [$_{SN}$[$_{VP}$ ima-ta-pis$_j$ [$_V$[$_{SA}$ mana mancha-r$_k$] rura-] [$_{Agr\text{-}O}$ -ø$_j$]] [$_{Agr\text{-}S}$ -q$_k$]] -kuna
what-obj-indef not fear-advss do 3 sub plur
'those who do (anything) whatever without being afraid'

Both 83 and 84 are consistent with the analysis we have been pursuing, namely that *-r* is an adverbializer and the clause it heads is adjoined to the verb or one of its projections. A further example follows:[67]

(85) [$_{VP}$[$_{SA}$ infirnu-man aywa-r] [$_{VP}$[$_{SA}$ kañiku-q allqu-kuna-ta kañi-pti-n]
hell-goal go-advss biting-sub dog-plur-obj bite-advds-3p

[$_{VP}$ astaku-]]] -na-n-paq
whip- -sub-3p-pur

'in order to whip, as he goes to hell, the biting dogs that (might) bite him'

[67]The brave are invited to consider the following example: *[Tumaykashanchaw [uywa mikuyta mikuykaq]-ta tarir]-qa uywapa duyñunta astan [alwasirnin charipaptin] rinsa:ruwan [[uywata michir] mana sumaq mikuypita rikashan]-pita [[willaparir] willaparir] [yapaychaw sumaq rikananpaq].* '[If as he is circulating he finds [an animal eating food]] he whips the animal's owner [while the marshal holds him] with a rope [because [while pasturing the animal] he did look out well for the food] [[advising him] and advising him] [so that next time he look out well].'

6.4.2 Adverbial clauses and reciprocal

Consider 86:

(86) Mayqa-nchi:-si mas naw(pa)puntata chaya-r_k miku-naku$_k$-shun.
which-12-indef more ahead arrive-advss eat-recip-12
'Whichever of us(incl) arrives first will eat the other.'

I believe that the semantic interpretation of 86 requires that *-r* be bound by *-nakU* 'reciprocal' because what is reciprocal is ... *chaya-r miku-* "k eating j if k arrives first". If the adverbial clause were adjoined to the VP of the higher clause, the meaning should be 'Whichever of us arrives first, we will eat each other' but, of course, that is not what this sentence means. The required coindexing is possible if the SA is adjoined to the verb *before the reciprocal suffix is added*, as in Figure 11. It would not be possible if the SA were adjoined to the VP above the reciprocal.[68]

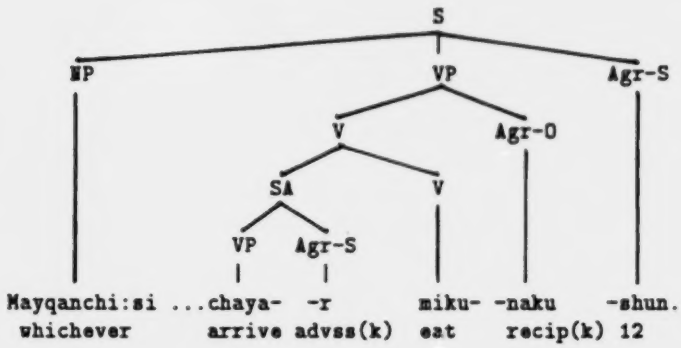

Figure 11: Whichever of us arrives first will eat the other.

[68] Pam Munro (personal communication) provided the following Mohave example, which may show the same phenomenon:

hatčoq-č poš taver-m iduu, pož-č hatičoq taver-m iduu,
dog-subj cat chase-ds be cat-subj dog chase-ds be

makap-č mat taver-m idoo-me.
one-subj ref/recip chase-ds be-tns

'(It must be that) the dog is chasing the cat or the cat is chasing the dog.'

The semantic interpretation of the last clause would seem to require that *-m* 'ds' depend on *mat*, a "non-agreeing proclitic used for reflexives and reciprocals." I am not sure this can be reduced to a structural requirement in which *-m* is bound by the reciprocal, as suggested for the Quechua example in the text.

6.4.3 Complements to phasal verbs

Phasal verbs (see section 2.3) select an optional same-subject switch reference complement headed by *-r*;

(87) mana-raq parla-r usha-pti-n 'before he had stopped speaking'
not-yet speak-advss finish-advds-3p
$[_{SA}[_{FP}[_{VP}[_{Adv}$ mana-raq$]$ $[_{V'}[_{SA}[_{VP}$ parla-$]$ $[_{Agr\text{-}S}$ -$r_j]]$ usha-$]]$ -pti$]$ $[_{Agr\text{-}S}$ -$n_j]]$

The adverbial clause is a sister to the phasal verb.[69]

The following AnQ examples are from Miller [22, p.74,124]:

(88) usha-ri-rqu-: upya-r 'I just finished drinking.'
finish-aspect-pst-1 drink-advss

(89) qalla-yka:-mu-n choka-r-nin 'He started coughing.'
begin-impf-afar-3 cough-advss-3p

(90) upya-r usha-ri-r-na-shi ewku-rqu-naq.
drink-advss finish-aspect-advss-now-ind go-aspect-narrpast
'After he finished drinking, he went.'

6.4.4 Conchucos switch-reference anomalies

Stewart [32] claims that what appear to be switch-reference anomalies in Conchucos Quechua are really instances of *-pti* as a marker of thematic discontinuity. Such cases may be handled as sisters of S, as just proposed for *-shpa*. This allows the subject of the subordinate clause to be either coreferential or non-coreferential to that of the main clause. Consider example 91 (Stewart [32, p.334, ex.1]):

(91) Mi:sa-ta rura-ka-ski-pti-n-qa ku:ra-qa llushti-ku-r ...
mass-obj do-ref-pfv-advds-3p-top priest-top undress-ref-advss
'When the priest had finished saying mass, undressing ...'

This is followed by a long string of events—in same-subject adverbial clauses—in which the priest is the principal actor. The first clause of 91 looks like a switch-reference violation: its adverbializer is *-pti* 'advds' even though its subject—the priest—is the same as that of the following events. But this does not violate Principle B if the first clause is generated as a sister to the whole sentence. In that position, its Agr-S, the pronoun *-n*, is not bound (as it would be if this clause were adjoined to a VP).

Let us consider another case, that of 92 (Stewart [32, p.269, ex.90]):

(92) ... yayka-ra-tsi-ma-r shumaq parla-ku-ya-rqa-:.
enter-incep-caus-1obj-advss nice talk-ref-pl-pst-1
'...they ushered me in and we talked nicely with one another.'

[69] This is important to our claim about example 141 in section 9.

The *-r* refers to a group of people *exclusive* of the speaker while *-ya-...-:* (-pl...-1) includes the speaker. Let {SPEAKER} represent the first person, {X,Y,...} represent a group of people other than {SPEAKER}, and {SPEAKER}∪{X,Y,...} represent the first person as well as those people. Then the binding of 92 is represented in 93a and the understood referents in 93b:

(93) a. ... $-ma_j$ $-r_k$ ..... $-:_k$
b. {SPEAKER} {X,Y,...} {SPEAKER}∪{X,Y,...}

-r is coindexed with *-:* on the basis of co-referring to {x,y,...}, despite the discrepancy with {SPEAKER}.

6.5 Concluding remarks about switch reference

The analysis proposed here differs from Finer's and Hermon's analysis in that it does not presume a mediating COMP, nor does it depend on Ā-binding, nor on the theory of control. Our account is much simpler, and reflects the extent to which Quechua switch-reference phenomena are hierarchical.

7 *-y* 'infinitive'

Under the assumption that infinitives are clauses, PRO was invented to preserve the notion that every clause has a subject. Thus, in ... *wants* [$_{S'}$ COMP [$_S$ PRO *to win*]], *to win* is a sentence, the subject of which is PRO, rather than a VP (as in ... *wants* [$_{VP}$ *to win*]).

In HgQ, *-y* 'infinitive' occupies Agr-S, so it *is* a subject. There is therefore no motivation in HgQ for PRO. And if there is no PRO, then there is no theory of control.[70]

7.1 Infinitive object complements

As illustrated in section 4.2 with example 30, clauses headed by *-y* 'infinitive' may be object complements. A further example follows:

[70]I have unsuccessfully searched for cases to motivate PRO and a theory of control. For example, consider the following:

Hwan Marya-ta {a. willa- (tell)} -ra-n may-man aywa-na-n-paq-pis.
John Mary-obj {b. tapu- (ask)} -past-3 where-goal go-sub-3p-pur-indef

'John {a. told / b. asked} Mary where s/he should go.'

Unlike English, for which *ask* and *tell* have different control properties, in both a. and b. the subject of the complement may refer to John, to Mary, or to some other person.

For CzQ, Lefebvre and Muysken [21, p.39] reject the notion that infinitival clauses contain PRO; see particularly their discussion in connection with example 71.

(94) Aywa-y-ta muna-: 'I want to go.'
go-inf-obj want-1
[s[vp[pp[sn[vp aywa-] [Agr-S -y_j]] [p -ta]] [v muna-] [Agr-O -ø]] [Agr-S -$:_j$]]

There is no subject accessible to *-y* in the complement; the governing category for *-y* is the entire clause. *muna-* selects the infinitive object complement, so *-ta* is not a barrier. *-y*, an anaphor, must be bound in this domain; it is bound by *-:* '1'.

In HgQ, infinitive complements may not be followed by a possessive suffix. However this *is* possible in AnQ and some other dialects. The following is grammatical in AnQ but not in HgQ:

(95) AnQ: Maqa-ma_k-y_j-nintsik_k-ta muna-n_j. 'He wants to hit us(incl).'
HgQ: *Maqa-ma_k-y_j-ninchi:$_j$-ta muna-n_j.
hit-1obj-inf-12p-obj want-3

I account for this as follows: AnQ *-y* resists binding by an immediately following possessive suffix; see table 2, page 104. This permits the coindexing indicated in 95. By contrast, in HgQ *-y* would be coindexed with the following possessive. This possessive suffix—a pronoun—ends up bound in its governing category, so the sentence is ill-formed. (Compare this to 107 below, in which the adverbial clause is not selected by the verb.)

Consider 96 (Weber [38, p.86]):

(96) a. maqa- -ma -y -ta muna- -ø -n
b. maqa- -ø -y -ta muna- -ma -n
c. maqa- -ma -y -ta muna- -ma -n
hit 1obj inf obj want 1obj 3
'He wants to hit me.'

Weber [38, section 4.2.2] described this as "a sort of morphological raising," with (i) copying the object marker into the higher verb to get 96c, followed optionally by (ii) deletion of the object marker in the complement to get 96b). Various facts make this sort of analysis plausible:

1. There is nothing in principle to keep move-α from applying to Agr-O. It would be another case of incorporation along the lines of Baker's [1]. That these suffixes can be moved reflects their status as nominals.

   I assume a refinement to the principle of structure preservation: In addition to restricting the movement of phrasal categories to phrasal positions and lexical categories to lexical positions, Agr's move only to Agr positions.

2. As discussed in section 2.5, movement to Agr-O is possible because a θ-role is not necessarily assigned to it. For example, in *maqa-shqa ka-shu-nki* 'He had hit you.' (12), *-shu* gets its θ-role from the lower, transitive verb, so must have been generated there and moved to the auxiliary. This is rather compelling evidence that Agr-O may move from a complement to the verb that selects the complement.

3. In 96b and c, *muna-* 'want' does not assign a θ-role to *-ma:* '1obj'. Rather, I assume that *muna-*'s θ-role (expressing what is desired) is assigned to the object complement, precisely as in 96a.

4. Consider 97:

   (97) *Maqa-ma$_1$-y$_k$-ta muna-shu$_2$-nki$_k$.
   hit-1obj-inf-obj want-2obj-2

   Why is it ungrammatical? One explanation is as follows: *muna-* 'want' assigns its θ-role to the complement clause; it has no θ-role to assign to *-shu*. So *-shu* must get its θ-role from the complement by being coindexed with one of its arguments. This is impossible because *-ma* '1obj' occupies Agr-O and the Agr-S is coindexed with a third person.

Thus, I assume that the d-structure for the three possibilities in 96 is as follows, where the Agr-O of the higher clause is coindexed with the complement:

[$_S$[$_{VP}$[$_{PP}$[$_{SN}$[$_{VP}$[$_V$ maqa-][$_{Agr\text{-}O}$ -ma]][$_{Agr\text{-}S}$ -y$_j$]]$_k$[$_P$ -ta]] [$_V$ muna-][$_{Agr\text{-}O}$ -Ø$_k$]][$_{Agr\text{-}S}$ -n$_j$]]

96a results from no movement. 96b results by the movement of *-ma:* '1obj' to the Agr-O position of the higher clause.[71] When *-ma:* '1obj' moves, it leaves behind a trace (which it binds):

[$_S$[$_{VP}$[$_{PP}$[$_{SN}$[$_{VP}$[$_V$ maqa-] [$_{Agr\text{-}O}$ t$_k$]] [$_{Agr\text{-}S}$ -y$_j$]] [$_P$ -ta]] [$_V$ muna-] [$_{Agr\text{-}O}$-ma:$_k$] [$_{Agr\text{-}S}$ -n$_j$]]

I am not entirely certain how to handle 96c. Perhaps it results by move-α just like 96b, but with the difference that what is "moved" is really copied.

7.2 Infinitives in subject position

In English, an infinitive may be the subject of a main clause, as in [PRO *to err*] *is human*. For HgQ, this is not possible because *-y* is an anaphor. To see this, consider the structure that would be involved: [$_S$[$_{SN}$ ... -y$_j$]$_k$ ... Agr-S$_k$] The only possible binder for *-y* would be the clause it heads, but to coindex these (i.e., to take $j = k$) would violate the i-over-i Condition.

There is a class of apparent counter-examples. HgQ *-y* 'infinitive' forms many (perhaps several hundred) lexical nominalizations.[72] These may be the subject of the verb *ka-* 'be'; e.g.:

[71] I do not know whether it fills the empty Agr-O or is adjoined to it, but that is an implementation detail I am comfortable about deferring.

[72] Examples: *aru+y* 'work' from *aru-* 'work', *chaka+y* 'night' from *chaka-* 'be dark', *ha:ma+y-ni:* 'my breath' from *ha:ma-* 'breath', *miku+y* 'food' from *miku-* 'eat', *muchu+y* 'famine' from *muchu-* 'be scarce', *ñaka+y* 'suffering' from *ñaka-* 'suffer', *rupa+y* 'fever' from *rupa-* 'burn', *huk taka+y-lla-chaw-mi* 'with one blow' from *taka-* 'strike', *tumari+y* 'lap, revolution' from *tuma+ri-* 'revolve', *Hwan-pa uywa+y-nin* 'John's servant' from *uywa-* 'to raise', *kuya+y huti* 'nickname (name of affection)' from *kuya-* 'love', etc.; see Weber [42, p.51f].

(98) Ñaka-y mana ka-nqa-chu. 'There will not be suffering.'
suffer-inf not be-3fut-neg

(99) Mana-mi miku+y ka-n-na-chu. 'There is no longer any food.'
not-dir food be-3-now-neg

Evidence that these involve lexical nominalization rather than true infinitive complements is that not just any verb can be the subject:

(100) { *aywa- (go) / *puñu- (sleep) / *qachwa- (dance) } -y ka-ra-n inf be-pst-3 'There was *going/*sleeping/*dancing.'

7.3 Manner adverbs with *-y(-lla)-pa*

Adverbs formed with *-y-pa* (-inf-gen) or *-y-lla-pa* (-inf-just-gen) resemble "subject controlled gerunds" like 'My friend worked on her paper *while listening to music*' (from Emonds [13, p.72,3]). One thing they have in common is that their subject must be coreferential with the subject of the clause in which they occur. In Quechua, this is because they are anaphors.

(101) ... arma-ku-n$_k$ [pushillu-wan hana-n-man wiña-ku-y$_k$-lla-pa].
bathe-ref-3 mug-with top-3p-goal pour-ref-inf-just-gen
'...they bathe, pouring water over themselves with a cup.'

(102) ... rura-pa-n$_k$ llanqi-ta-pis [palma-pita pillta-y$_k$-pa]
make-ben-3 sandal-obj-indef palm-abl braid-inf-gen
'...they make sandals for him, braiding them out of palm (fiber)'

(103) ... hama-n$_k$ ...[mana ima awturida:-pis ka-y$_k$-lla-pa]
rest-3 not what authority-indef be-inf-just-gen
'...they rest ...not being any authority.' i.e. 'rest from being...'

(104) [Tayta-n-ta mama-n-ta mana musya-chi-y$_k$-lla-pa]
father-3p-obj mother-3p-obj not know-caus-inf-just-gen

paka-y$_k$-lla-pa puri-pa:-naku-n$_k$.
hide-inf-just-gen walk-ben-recip-3

'Not letting their parents know, they "go out" together on the sly.'

(105) ... wasi-n-man pusha-ku-n$_k$ mana pi-ta-pis willa-pa-y$_k$-lla-pa.
house-3p-goal lead-ref-3 not who-obj-indef tell-ben-inf-just-gen
'...he leads her to his house without telling anyone.'

(106) ... usha-y$_k$-pa usha-r$_k$ kanta-nki$_k$...
finish-inf-gen finish-adv sing-2
'...crow again and again without ceasing...'

I believe that in all these cases the adverbial clause with *-y...-pa* is adjoined to the VP of the including clause and that thus *-y*'s governing category is the whole clause. Although the adverbial clause is not selected, *-pa* is not a barrier. (This may be related to the fact that in possessed noun phrases, *-pa* is not a barrier between the possessor and Agr-P; see footnote 50.) Therefore *-y* is bound by its subject.

Now consider 107. Here *-y* is followed by a possessive suffix:

(107) Mana musya-y_k-ni:$_k$-pa willa-shka-:$_k$ llapan-ta...
not know-inf-1p-gen tell-perf-1 all-obj
'Not knowing, I told him everything...'

The adverbial clause of 107 must not be adjoined to the VP headed by *willa-* because *-:* '1p' would be bound by *-:* '1'. Rather, it is adjoined to the sentence, with less semantic proximity to its verb than when adjoined to the VP. The contrast is clearer in 108 and 109:

(108) Weqru-y-lla limp-inf-just { a. ø / b. *-: (1p) } -pa -gen puri-:... walk-1 'I walk limpingly.'

(109) Weqru lame ka-y-lla- be-inf-just { a. *ø / b. -: (1p) } -pa -gen puri-:... walk-1 'Being that I am lame, I walk...'

The possessive suffix may not follow in 108b because the adverbial characterizes the manner of walking. It is semantically proximate and syntactically a sister to the verb or one of its projections. By contrast, the possessive suffix is required in 109 because the adverbial clause is semantically distant from the main clause. Syntactically it is adjoined to it, so the possessive suffix is required to bind *-y* (which would otherwise violate Principle A).

7.4 Infinitival relatives

Clauses headed by *-y* 'inf' sometimes—although very rarely in HgQ—modify nouns. In 110, *-y* is bound by the possessor of the head noun:[73]

(110) rayna ka- -y_j llachapa -n_j 'her clothes for being queen'
queen be -inf clothes 3p
[$_{NP}$[$_{NP}$[$_{SN}$[$_{VP}$[$_{NP}$ rayna] ka-] [$_{Agr\text{-}S}$ -y_k]] [$_{NP}$ llachapa]] -n_k]

[73]Stewart [32, p.315, ex.15] gives the following example for AnQ, which is the same except that the head is empty:

chakra aru-q ka-y_j ø-nin$_j$-ta qala-tuku-r 'changing from his work (clothes)'
field work-sub be-inf ø-3p-obj nude-make-advss

Here is another example (from Stewart [32, p.7]): *rika:-ya:-shu$_j$-y$_k$-niki$_j$ e$_k$-kuna-ta* (see-pl-2obj-inf-2p-plur-obj) 'those$_k$ who have seen you(pl)$_j$'. Note that the possessive suffix follows the empty head in the previous case, but follows it in the latter; I'm not sure this is justified.

By contrast, in 111 a possessive suffix binds *-y*:

(111) Nirkur manda-q ka-y-nin se:llu-wan se:llu-sha.
then order-ag be-inf-3p seal-inst seal-3perf
'Then he sealed it with the seal of his being an authority'
...[PP[NP[NP[SN[VP[NP manda-q] ka-] [Agr-S -yk]] -ninₖ] se:llu] -wan]...

If the possessive suffix did not follow *-y* 'inf', *-y* would have to be bound by *se:llu*, meaning something like 'with the seal which was the authority'.

The coinage *yachay wasi* is being promoted across the Quechua world as an alternative to the loan *iskwila* or *iskuyla* 'school'. In HgQ (and I suspect many other Quechua languages) *yachay wasi* makes no sense because *-y* is bound by *wasi*, but houses do not learn.[74]

I do not know why the infinitive in 112 is followed by a possessive suffix while in 113 it is not:

(112) qam-qa manda-q ka-y-niki-ta manakaq[75]-man chura-y-ta qalla-yku-shka-nki.
you-top order-sub be-inf-2p-obj nought-goal put-inf-obj begin-up-perf-2
'You have begun to bring to nothing your being an authority.'
[PP[NP[SN[VP[NP manda-q] ka-] [Agr-S -y]] -niki] -ta]

(113) Manda-q ka-y-ta-chu chaski-sha? 'Did he receive a position of authority?'
order-sub be-inf-obj receive-3perf
[S[VP[NP[PP[SN[VP[NP manda-q] ka-]-yⱼ]-ta]-chu]chaski-[Agr-O -ø]][Agr-S -shaᵢ]]

How is *-y* bound in 114? Apparently it is bound by *-shun*, but why isn't [PP...*-pita*] a barrier?

(114) Abusi:bu ka-y-lla-pita hwastidya-pa:-ma:-shun.
abusive be-inf-just-abl bother-ben-1obj-12
'They will bother us just because they are abusive.'
[S[VP[PP[SN[SN[VP[NP abusi:bu] ka-][Agr-S -y]]-lla]-pita]
[VPhwastidyapa:-[Agr-O -ma:]][Agr-S -shun]]

After all, generally when an infinitive clause is the object of an oblique preposition other than *-pa*, it must have a possessive as in the following (Stewart [32, p.314, ex.08]):

(115) llampu shonqu ka-y-nin-wan 'being [that s/he is] soft-hearted'
soft heart be-sub-3p-inst

[74] An acceptable alternative is *yachakuna wasi* 'a house for us(incl) to learn in':

[NP[SN[FP[VP yachaku-] [F -na] [Agr-S -ø]] [N wasi]]
learn -sub -12p house

[75] *manakaq* 'insignificant' undoubtedly comes from *mana ka-q* (not be-sub) 'which is nothing'.

7.5 *-y-paq* 'we should'

Section 5.3.2 discusses cases of V-*y-paq* meaning 'we should do....' I propose that *-y* is bound by -ø '12p' in these cases. (But for the existence of -ø '12p', these would be counter-examples to the claim that *-y* is an anaphor.)

7.6 Some derived adverbs

Some adverbs, which might now be fixed expressions, are derived from *-y-ø-paq*. For example, I understand HgQ *kvyayllapaq* 'beautiful' (as in *kuyayllapaq hipash* 'beautiful young woman') as follows:

(116) kuya- -ø$_j$ -y$_k$ -ø -lla -paq hipash$_j$
love -3obj -inf -12p -just -pur young woman
'a young woman worthy of our appreciating'

In Huamalies (Huanuco) Quechua, *mana awantaypaq* means something like 'irresistible', as in 117 (courtesy of Bruce Benson):

(117) sarikaykaman runtu vientuqa mana awanta-y-ø-paq
it grabbed me hail wind not resist-inf-12p-pur
'wind and hail that could not be resisted grabbed me'

In AnQ *manchariypaq* means 'frightening' (Stewart [32, p.121, ex.7]); this must have been *manchari-y-ø-paq* (fear-inf-12p-pur) 'for us to fear' or 'worthy of our fearing'.

For these cases I have posited -ø '12p' as the binder for *-y*. However, for other adverbs with *-y* positing -ø '12p' would be incorrect. Rather, these are adjoined to the verb (or some projection thereof) and bound by the higher subject. One such case is *hinaylla* 'just like that', which must derive from *hina-y-lla* (do.that-inf-just) 'do like that.' (*hina-* is no longer a verb in HgQ.) Another case follows:

(118) ñaka-y-ta-raq tari-sha
take:a:long:time-inf-adv-yet find-3perf
'He found it only after he had searched a good while.'

7.7 Concluding remarks about *-y*

A wide range of facts about the use of *-y* follow from the recognition that it is an anaphor.

8 *-q* [−verbal]

-q [−verbal] is used in a number of different ways: in relative clauses, in the habitual tense, in the purpose motion construction, the periphrastic future, and in "result" clauses with *-q-paq*. I claim that in all these cases *-q* is an anaphor.

8.1 Relative clauses

In relative clauses, *-q* is [+nominal]; the clause it substantivizes is an uncased sister to an NP (possibly empty), as permitted by rule 3.

Cole [10] and Lefebvre and Muysken [21] treat the restricting clause as an S', a sister to the head NP, as in 119a. I propose instead that the restricting clause is simply an SN as in 119b, one case of rule 3. (Recall that SN abbreviates S[+nominal].) Given that the head will be coindexed with some element within the restricting clause, the general structure is more specifically as in 119c, and that for relative clauses with *-q* in 119d. An example is given in 120.

(119) a. $[_{NP}$ S' NP]
b. $[_{NP}$ SN NP]
c. $[_{NP}\ [_{S[+nominal]} \ldots NP_j \ldots]\ NP_j]$
d. $[_{NP}\ [_{S[+nominal]} \ldots [_{Agr\text{-}S}\ \text{-}q_j]]\ NP_j]$

(120) $[_{NP}[_{SN}[_{NP}\ e_j]\ [_{VP}$ maqa- -ma] $[_{Agr\text{-}S}$ -$q_j]]\ [_{NP}$ runa$_j$]] 'the man who hits me'
hit lobj sub man

Given this structure, we can understand why clauses substantivized by *-q* may only relativize into the subject position. *-q* is an anaphor so needs a binder in its governing category. The NP's head c-commands *-q* within the NP, so it binds *-q*. But *-q*, being the Agr-S of the restricting clause, *is* the subject (or, if we are uncomfortable with that, we could say that it is *coindexed* with the subject). Thus, the NP's head is always coindexed with the subject of the restricting clause.

Headless relative clauses are accommodated by admitting empty heads. Lefebvre and Muysken [21, p.170f] argue for the structure $[_{NP}[_{S'}\ldots NP_i\ldots][_{NP}\ e_i]]$. My proposal differs only in that I take the restricting clause to be an S[+nominal] rather than an S'. For example,

(121) payla timpuyka-q-ta talliriykur... 'Having tipped over the boiling pot...'
pot boil-sub-obj having tipped over
$[_{PP}[_{NP}[_{SN}[_{NP}$ payla$_i$] $[_{VP}$ timpuyka-] $[_{Agr\text{-}S}$ -$q_i]]]\ [_{NP}\ e_i]]\ [_{P}$ -ta]]

The subject NP is coindexed with *-q* by the general rule coindexing Agr's with their corresponding overt NP's. Because *-q* is an anaphor, it is coindexed with the $[_{NP}$ e]. Nothing special needs to be stipulated for this type of relative clause.

In Southern Quechua dialects, relative clauses formed with *-shqa* and a possessive suffix (e.g., *-shqa-n*) may not be used for relativizations into the subject. Lefebvre and Muysken [21, p.196f] give an account of this for CzQ. Under the approach pursued here, there is a more direct account: Relativization into the subject would coindex the possessive suffix in Agr-S with the relative clause's head, violating Principle B because the possessive suffix, a pronominal, is bound in its governing category.

However, such relative clauses *are* possible for HgQ (Weber [35, 38]) and other Central Quechua languages. In light of the just-given account for CzQ, this requires an explanation. I tentatively propose the following. Alongside relative clauses like

wañu-sha-n runa (die-sub-3p man) 'the man who died' there is the participle *wañu-sha runa* (die-participle man) 'dead man'. I claimed (Weber [42, p.283]) that these are structurally and semantically different, but suppose that *structurally* relative clauses with *-sh(q)a-n* are substantivizations with *-sh(q)a* 'participle' followed by a possessive suffix *in Agr-P rather than in Agr-S.* Section 5.2 argues that possessive suffixes in Agr-P are "mild" anaphors. Thus, from Agr-P the possessive suffix could be coindexed with the head of the relative clause, so relativizations into the subject are possible with *-sh(q)a-n.* (Relativizations into non-subject positions—for which the possessive suffix is not coindexed with the head—would still be handled as having a pronominal possessive suffix in Agr-S.)

The possibility of using *-sha* for subject relatives in HgQ shows that HgQ is not amenable to Lefebvre and Muysken's analysis. Likewise, the fact that they are impossible for CzQ, which has a participle like that on which I based the explanation for HgQ, shows that the explanation for HgQ is inconsistent with the CzQ facts. An account is needed that can explain both cases.

8.2 The habitual tense

The habitual tense (Weber [42, p.109f]) is formed by substantivizing the semantically main verb with *-q* and making this the complement of *ka-* 'be', which bears inflection for the subject:

(122) [$_S$[$_{VP}$[$_{SN}$[$_{VP}$ achka-ta miku-] [$_{Agr\text{-}S}$ -q$_i$]] ka-] [$_{Agr\text{-}S}$ -:$_i$]] 'I used to eat many.'
many-obj eat -sub be 1

-q is coindexed with the subject of the higher clause, which is an accessible subject within *-q*'s governing category.

Whenever *ka-* 'be' would be inflected as third person present, it is systematically absent; therefore the apparent main verb of many habituals is inflected simply with *-q*.

8.3 Purpose motion complements

The "purpose motion construction" is a clause adverbialized by *-q* as a sister to a motion verb such as *aywa-* 'go'; see Weber [38, p.114] and [42, p.292]. Only motion verbs select a purpose motion complement.[76]

[76] I believe that the adverb *tumariq* 'all around' may derive historically from *tuma-* 'circulate, go about' and *-q*; e.g.:

... inteeru kantu-n-pa tumari-q$_k$ adurnu-wan adurna-n$_k$.
entire edge-3p-gen circle-adv ornament-com adorn-3
'...they adorn it with ornaments [going] all around the edge.'

Chay-ta hana-lla-n-pa kuchu-nchi$_k$ tumari-q$_k$
that-obj top-just-3p-gen cut-12 circle-inf-just-gen

The subject of a purpose motion complement is usually coreferential to the subject of the superordinate clause. This follows from the fact that *-q* is an anaphor, coupled with the fact that the clause it heads occurs in the c-command domain of the subject of the superordinate clause. Examples follow:

(123) Hwan Marya-ta rika-ø-q aywa-ra-n. 'John went to see Mary.'
John Mary-obj see-3-sub go-pst-3
[$_S$[$_{PP}$[$_{VP}$[$_{SA}$[$_V$[$_{PP}$ Marya-ta] rika-] [$_{Agr\text{-}S}$ -q_j]] aywa-] [$_F$ -ra]] [$_{Agr\text{-}S}$ -n_i]

(124) Miku- -q shamu- -ra -:. 'I came to eat.'
eat sub come pst 1

In 123 and 124 the anaphor *-q* is bound by the subject of the superordinate clause. By contrast, consider 125, which means that the *first* rather than the *third* person is to go to eat. Thus *-q* is bound by the object, not the subject, of the higher clause.

(125) Miku- -q kacha- -ma -sha. 'He sent me to eat.'
eat -sub send -1obj -3perf

The adverbial clause is a sister to *kacha-* 'send' and not to the VP:[77] Compare 124 and 125 as diagrammed in Figure 12a and b respectively:

For English, similar facts would be explained by positing PRO as the subject of the purpose motion complement PRO *to go*, ascribing different control properties to *go* and *send*. The analysis I propose for HgQ is much simpler: It does not require PRO, the theory of control (probably the least developed and most questionable aspect of the Government and Binding theory), nor ascribing different control properties to *aywa-* and *kacha-*.

It is interesting to compare purpose motion complements (126a) with the standard purpose clauses (126b):

(126) Miku- eat { a. -q (-sub) / b. -na-:-paq (see-sub-1p-pur) } shamu-shka-: come-perf-1 'I came to eat.'

---

ruri-n-kaq-ta mana da:ña-y-lla-pa.
inside-3P-def-OBJ not damage-adv

'We cut that just on the surface, all the way around, being careful not to damage that which is inside.'

In these cases the superordinate verb, *adurna-* 'adorn' and *kuchu-* 'cut' respectively, are not now motion verbs that select a purpose motion complement. However, here both imply an activity that proceeds along a path.

As an adverbial, *tumari-q* cannot be followed by a case marker (**tumari-q-pa*) while *pasa-y-pa* 'very' cannot be without it (**pasa-y*). The difference is that *-y* 'inf' substantivizes while in this case *-q* adverbializes.

[77] In light of 125, one might expect the following to be grammatical, but it is not: **miku-q aywa-chi-ma-sha* 'He made me go eat.' This needs an explanation.

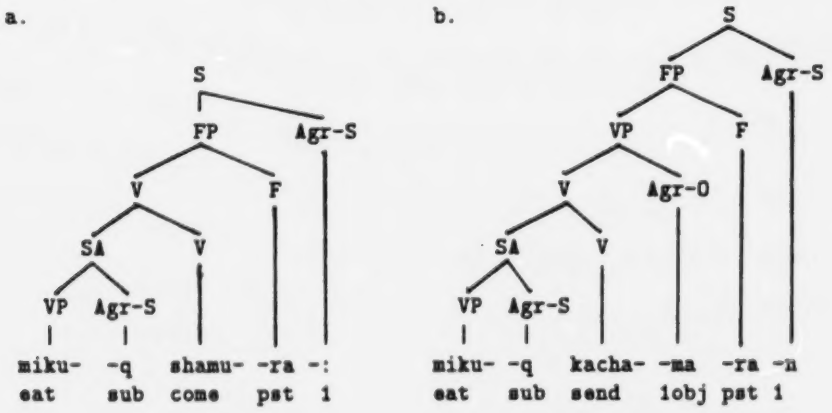

Figure 12: Purpose motion complements

Assuming that the purpose clause in 126b is a VP adjunct, how does the pronoun *-:* '1p' escape being bound in its governing category? The answer is as follows. Since the purpose clause is not selected by the verb, *-paq* is a barrier. Therefore, *-:* '1p' in the purpose clause is sufficiently "insulated" from *-:* '1' in the main clause that coindexing them does not violate Principle B.

A common way to express 'future' in HgQ is periphrastically, using the verb *aywa-* 'go' and a purpose motion complement:

(127) Wara kuti-mu-q aywa-:. 'I will return tomorrow.'
tomorrow return-afar-sub go-1

128 provides good evidence that the purpose motion complement is directly a sister of the verb and not adjoined to the VP:

(128) Taripa:- -ma -q -na aywa -nchi. 'He will now catch up to us(incl).'
catch up 1obj sub now go 12
[s[v[sA taripa:-ma-q-na] aywa-] -nchi]

As claimed in section 3, *-nchi* has the DIP whereby it can be indexed as 12 or 3, the latter taken only when the former would provoke a binding violation. Since *-q* is an anaphor, it is coindexed with *-nchi* and therefore acquires *-nchi*'s DIP. This has two effects:

1. If *-q* were indexed as '12', it would bind *-ma:* '1obj', violating Principle B. Therefore *-q* must be indexed as '3'. By virtue of being coindexed with *-q*, *-nchi* must therefore also be indexed as '3'.

2. By the DIP Corollary, because *-q* is indexed '3', its object must be coindexed with the DIP suffix's non-third value. Therefore *-ma:* is interpreted as a first person *plural inclusive* object, not simply as a first person *singular* object.

Therefore, the combination of (i) *-nchi*'s DIP, and (ii) the anaphoric status of *-q* determine that 128 is correctly interpreted as in 129a rather than 129b:

(129) a. taripa:-ma_{12}-q_3-na aywa-$nchi_3$ 'He will now catch up to us(incl).'
b. *taripa:-ma_1-q_{12}-na aywa-$nchi_{12}$

8.4 Sensory verb complements

As shown in section 5.2, sensory verb complements can be structured in various ways. When an overt subject NP occurs in the complement (e.g., 42), we must take it as the binder for *-q*. (Generally I have sought a clause-external binder for the *-r*, *-y* and *-q*, treating an overt subject NP and Agr-S as a discontinuous subject. However, in this case, this would leave *-q* without an appropriate binder.) This will also be the case when the object of the sensory verb complement moves into the main clause, as in 45.

The subject of a sensory verb complement usually occurs as the object of the higher clause. This is as expected because from that position it binds the anaphor *-q*. For example, in Figure 13 the subject *Tumas* occurs as the direct object of the higher clause: *Tumas* does not receive a θ-role from *rika-*; see section 2.5. There are two

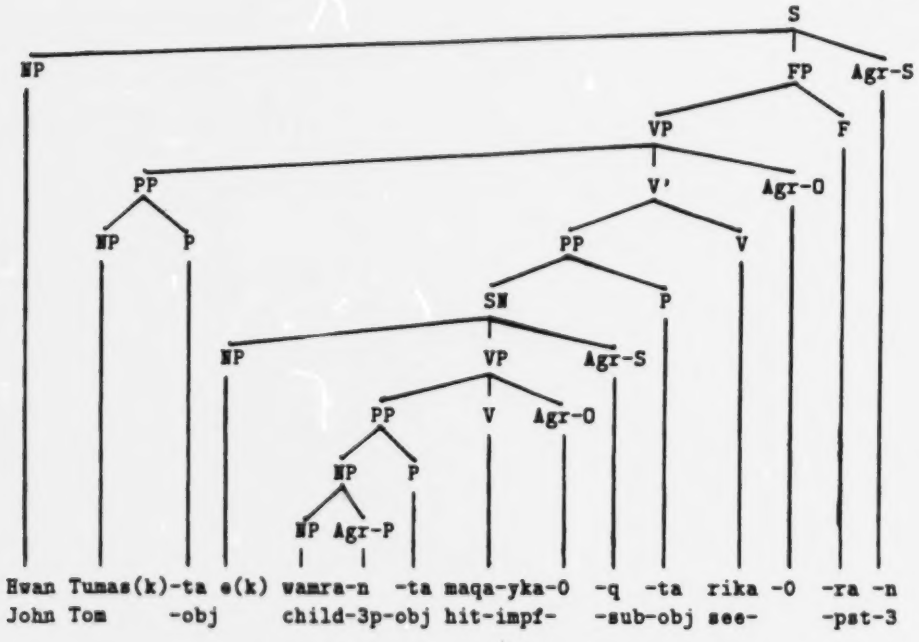

Figure 13: John saw Tom hitting his son.

ways it might receive a θ-role from the complement: (i) by *indirect* θ-role assignment

(Emonds [13]) or (ii) by being coindexed with a trace in the subject position, which would be the case if *Tumas* gets to the higher clause by move-α. (In the d-structure from which the second of these possibilities would be derived, *-q* would not be bound by *Tumas*, but since the binding conditions are imposed at LF, I assume that this is not really a problem.)

8.5 Possessive suffixes after *-q*

A relative clause substantivized with *-q* may be directly followed by a possessive suffix: *-ma$_i$-q(-ni:$_j$)* '3⇒1', *-ma$_i$-q(-ninchi:$_j$)* '3⇒12', *-shu$_i$-q(-niki$_j$)* '3⇒2', and perhaps *-ø$_i$-q(-nin$_j$)* '3⇒3', Weber [35, p.25]. In such cases, the possessive suffix is coindexed with the object. This does not violate Principle B because the possessive suffix is outside the object's governing category. And *-q*, an anaphor, is bound by the head of the relative clause, thus satisfying Principle A. Here is an example from AnQ (Stewart [32, p.184, ex.3]):

(130) ... qam-ta-pis kay mundu-man mira-ma-q-ni:-ta
you-obj-even this world-goal add-1obj-sub-1p-obj
'...and to you, who brought me into this world.'
[$_{NP}$ qam-ta-pis] [$_{NP}$[$_{SN}$[$_{SN}$[$_{VP}$kay mundu-man mira-[$_{AGT\text{-}O}$ -ma$_j$]][$_{AGT\text{-}S}$ -q$_k$]]-ni:$_j$]ø$_k$]

Weber [38, p.114, footnote 94] mentions that, although this is true for relative clauses, possessive suffixes may not follow the *-q* adverbializer of a purpose-motion complement. For example, 131 can only be interpreted as a relative clause, as in 131a, and not as a purpose motion construction, as in 131b:

(131) Willa-shu-q-niki shamu-sha. 'The one who tells you came.'
tell-2obj-sub-2p come-3perf *'He came to tell you.'

This difference may be because purpose motion complements must be adjacent to the motion verb that selects them in a way that the possessive suffix would interrupt.[78] However, "adjacent" here cannot mean "adjacency at s-structure," because purpose motion complements sometimes occur separated from the motion verb that selects them.

The facts are different for AnQ. For Huaylas, Pantoja et al. [27, p.410] give the following example:

(132) Kada hunaq-mi kutira-mu-shaq$_j$ yacha-tsi-ø$_k$-q$_j$-niki$_k$.
every day-dir return-afar-1fut learn-caus-sub-2p
'I$_j$ will return every day to teach you$_k$.'

For Conchucos, Stewart gives the following ([32, p.107, ex.4]):

[78] It is generally assumed that selected complements must be adjacent to their heads, at least in d-structure. Baker [1, p.383] says that two elements are not θ-coindexed at d-structure unless they are sisters. I do not know whether purpose motion complements get a θ-role from the verb that selects them.

(133) ... apa-$q_{j,k}$-man carcel-kuna-man qayku-tsi-mu-$ø_k$-q_j-niki$_k$
take-1⇒2-cond jail-pl-goal put in-caus-afar-sub-2p
'...I_j could take you$_k$ to put you$_k$ into jail'
(Stewart:'...I could take you to jail to have you locked up.')

8.6 Other adverbs with *-q-paq*

Result clauses formed with *-q-paq* are described in Weber [38, p.116] and [42, p.293].[79] Examples follow:

(134) Shikwa-sha paki-q-paq. 'It fell with the result that it broke.'
fall-3perf break-sub-pur
[s[vp[pp[sn paki-q_j] -paq] shikwa-] -sha$_j$]

(135) Haru-shka-: paki-q-paq. 'I stepped on it with the result that it broke.'
step-perf-1 break-sub-pur
[s[vp[v[pp[sn paki-q_j] -paq] haru-] $ø_j$ -shka] -:]

For AnQ, Stewart [32, p.317, ex.40,1] gives the following:

(136) ...[pacha-n-si$_k$ pashta-q_k]-paq llapi-ku-$ø_k$-naq
stomach-3p-even burst-sub-pur squash-ref[80]-3obj-narrpast
'...he squashed it with the result that its stomach even burst'

If, as proposed here, the *-q* of *-q-paq* is an anaphor, then examples like 135 and 136 require the result clause to be adjoined lower than the Agr-O, so that *-q* will be c-commanded by the object of the higher clause. I do not know why *-paq* is not a barrier in this case.

Another sort of adverb formed with *-q* is seen in 137:

(137) Rura-sha " alli-mi ka-:" ni-q-naw. 'He did it as though saying "I am good".'
do-3perf good-dir be-2 say-sub-sim
[vp[pp[sn[vp ...ni-] [agr-s q_j]] -naw] rura-] [agr-s -sha$_j$]]

A similar case for AnQ is seen in 138 (Stewart [32, p.190, ex.62,3]). The only difference between this and 137 is that *-naw* has cliticized in 137 but *yupay* has not cliticized in 138:

(138) Chakra-:-kuna-ta rika-yku-nki$_k$ kiki-:-ta rika:-ma-q_k yupay-lla
field-1p-plur-obj see-pol-2 self-1p-obj see-1obj-sub like-just
'(You$_k$) look after my fields just as though you$_k$ were looking after me.'

I do not know why *-naw* and *yupay* are not barriers in these examples. (Perhaps it is because the θ-role they assign is somewhat different than the other case markers?)

[79] The adverb *ushaqpaq* 'completely' may be analyzed as *usha-q-paq* (finish-sub-pur), literally 'with the result that it finished'. *-q* would be bound by the subject of the verb it modifies. Perhaps in certain contexts *-ø* '12p' is an implicit binder: *usha-q_j-$ø_j$-paq* (finish-sub-12p-pur), literally 'with the result that we(incl) finish (it).'

[80] *-ku* 'ref' is not a true reflexive here; it means that the actor carried out the action for his benefit.

8.7 Concluding remarks about *-q*

Recognizing that *-q* is an anaphor explains a wide range of facts about the clauses it heads.

9 Verb incorporation

I tentatively adopt Baker's [1] verb incorporation analysis for HgQ *-chi* 'causative'.[81]

Baker [1] argues that in d-structure causatives have their semantically-expected arguments. For a simple clause like *he goes* the d-structure is roughly [$_{I''}$[$_{NP}$ he][$_{I'}$[$_{I'}$ pres][$_{VP}$ go]]]. In the d-structure of the corresponding causative, *he* should be in the subject position, as in 139a. Incorporation (move-α applied to an X^0 category) moves *go* to the causative (where it adjoins), leaving behind a coindexed trace, as in 139b.

(139) a. [$_{I''}$[$_{NP}$ he] [$_{I'}$ pres [$_{VP}$[$_{C''}$[$_{C'}$[$_{I''}$[$_{NP}$ he] [$_{I'}$ I [$_{VP}$[$_{V}$ go]]]] C] [$_{V}$ cause]]]]
b. ...[$_{VP}$ t_k]]] C] [$_{V}$ [$_{V}$ go]$_k$ [$_{V}$ cause]]]]]

By the "Government Transparency Corollary" (GTC, Baker [1, p.64]), the composite verb governs the "causee"—*he* in this example. For this reason it is treated as a direct object (You make *him* go).

Let us now turn to Quechua. Consider example 140. The d-structure would be as in 140b[82] and the s-structure (after move-α moves *aywa-*) as in 140c.

(140) a. pay qam-ta aywa-chi-shu-ra-yki 'He made you go.'
he you-obj go-caus-2obj-pst-2
b. ...[$_{VP}$ [$_{V}$ aywa]] [$_{I}$ 2]] [$_{C}$ ø] [$_{V}$ -chi]] [$_{P}$ -ra]] [$_{I}$ -n]]
c. ...[$_{VP}$ [$_{V}$ t_k]] [$_{I}$ 2]] [$_{C}$ ø] [$_{V}$ [$_{V}$ aywa-]$_k$ [$_{V}$ -chi]]] [$_{P}$ -ra]] [$_{I}$ -n]]

By the GTC, the causee is governed by *aywa-chi-* (go-cause-);[83] this accounts for why it is treated as the direct object—case-marked with *-ta* 'obj' and triggering object agreement on the verb.

Causatives of transitive clauses are more complicated.

9.1 Verb incorporation and adverbial clauses

A verb incorporation analysis of causatives—coupled with our proposal that *-r* 'advss' is an anaphor—yields an account of a rather surprising case, that of 141:

[81] It may also account for *-na:* 'desiderative', *-qtu(kU)-* 'pretend', and perhaps other verbal suffixes. In the same vein, *-pa:* 'benefactive' and *-:shi* 'associative' may be cases of preposition incorporation.

[82] Note that this is consistent with Chomsky's proposal to put Adv lower than Agr-O.

[83] Further evidence that *aywa-chi-* governs the causee is that it is not possible to say **aywa-chi-ma-ru-:* 'I made myself go': the governing category of the causee is now the entire clause, so the pronoun *-ma* '1obj' cannot be bound by *-:* '1' as this would violate Principle B.

(141) Ñaka-r$_i$ qoya:-chi-ma$_i$-sha. 'He made me pass time suffering.'
suffer-advss pass.time-cause-1obj-3perf

This is an apparent switch-reference anomaly: the subject of the adverbial clause—the sufferer—is not coreferential with the subject of the main clause—the causer—but with the causee, the surface object of the causativized verb *qoya:-chi-*.[84]

I account for this as follows: The adverbial clause *ñaka-r* is a sister to *qoya:-* (that is, *ñaka-r* is an S[+r] complement selected by a phasal verb). Thus, *-r* is bound by *qoya:-*'s subject. When *qoya-* moves to join *-chi* 'caus', its subject is still available as a binder for *-r*; the fact that *qoya:-*'s Agr-S appears as the Agr-O of the composite verb *qoya:-chi-* reflects a change of governor, not of structural configuration.

However, this may involve movement. Perhaps an account can be given in which move-α moves the causee from the subject of the lower clause into the Agr-O of the higher clause. As argued in section 7.1 for infinitive object complements, movement to Agr-O does not violate the θ-Criterion. The causee would get its θ-role through a trace in the position of the subject of the lower clause.[85]

I leave the implementation of this idea open. Regarding the case-marking of the causee, Baker [1, p.192] writes, "The invocation of such a rule is perhaps the least appealing and least principled aspect of the whole VI [verb incorporation–DJW] account of morphological causatives." Baker then argues that case-marking the causee is "special" rather than principled. In light of this, I make no apologies for leaving the issue open.

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[84]Stewart [32, p.282, ex.110] gives the following example, an apparent switch-reference violation structurally similar to 141:

> Tsari-rku-r mana maki-ki-chaw shupra-ka-n-tsu
> grab-up-advss not hand-2p-loc peel-pass-3-neg
> 'Upon grabbing it/When you grab it, it (the wheat) can't be peeled in your hand.'

The d-structure would have the adverbial clause *tsarirkur* adjoined to the VP of a sentence 'you peel it in your hand'. Although passivization has applied, the second person subject is still available as a binder for *-r* 'advss'. One motivation for Baker's incorporation analysis of passives is to explain such "implicit argument effects"; see Baker [1, p.315,6]. The following example (Stewart [32, p.186, ex.24,5]) is a further case:

> Waqa-yka-nqa-yki-ta-qa shoqa-ka-nki. 'Be consoled, you who are crying.'
> cry-impf-sub-2p-obj-top console-pass-2

One would expect that after passive the object could not surface. (Another interpretation of this is that *shoqo-* has two objects, the person to be consoled and that from which s/he is to be consoled. In this case the "consoled" becomes the subject by passive and the other surfaces as an object.

[85]I think an argument can be made against the claim that *-chi* assigns a θ-role to the causee on the basis that the θ-role depends on the degree of agency imputed to its subject, which is largely determined by the causativized verb; see Cole [11].

9.2 Infinitive object complements and verb incorporation

Consider 142 and 143:

(142) Ligi- -y_j -ta yacha- -:$_j$. 'I know how to read.'
read inf obj know 1

(143) Ligi- -y_j -ta yacha- -chi -ma$_i$ n. 'He teaches me how to read.'
read inf obj know caus 1obj 3

In section 7.1 I rejected the analysis of 142 using PRO in favor of treating *-y* as an anaphor. Likewise, if we were to analyze 143 as is done for English, we would posit a PRO in the infinitive clause and say that *yacha-chi*—like *teach*—is an object control verb. I reject this analysis in favor of a verb incorporation analysis. The d-structure would be as in 144a and the s-structure in 144b. (More for the sake of simplicity than out of conviction, I assume that *-chi* 'cause' selects an S complement.)

(144) [$_S$[$_{VP}$[$_S$[$_{VP}$[$_{PP}$[$_{SN}$[$_{VP}$ ligi-] [$_{Agr\text{-}S}$ -y_j]] [$_P$ -ta]]

$$\left\{\begin{array}{l}\text{a. [}_V\text{ yacha-]] [}_{Agr\text{-}S}\text{ 1}_j\text{]] [}_V\text{ -chi] [}_{Agr\text{-}S}\text{ -n]]} \\ \text{b. [}_V\text{ t}_k\text{]] [}_{Agr\text{-}S}\text{ 1}_j\text{]] [}_V\text{[}_V\text{ yacha-}_k\text{] [}_V\text{ -chi]] [}_{Agr\text{-}S}\text{ -n]]}\end{array}\right\}$$

The important advantage of this analysis is that after *yacha-* moves to join *-chi* 'caus', its subject is still available as a binder for *-y*. The fact that the causee ends up as the Agr-O reflects that it is governed by *yacha-chi-*, not a change of structural position.

This sort of analysis depends on giving infinitive complements a low attachment point. The necessity of doing so can be seen 145:

(145) Shunta- gather $\left\{\begin{array}{l}\text{a. -y-ta (inf-obj)} \\ \text{b. *-na-yki-ta (sub-2p-obj)}\end{array}\right\}$ yacha-chi-ø-:.
learn-caus-2obj-1
'I teach you to gather.'

Consider the various attachment possibilities for 145b given in 146:

(146) a. [shunta-na-yki$_2$-ta [yacha- -chi -ø$_2$ -:$_1$]]
b. [shunta-na-yki$_2$-ta [yacha- -chi -ø$_2$]] -:$_1$
c. [shunta-na-yki$_2$-ta [yacha- -chi]] -ø$_2$ -:$_1$
d. [shunta-na-yki$_2$-ta yacha-] -chi -ø$_2$ -:$_1$

Why is 145b ill-formed? If we take the complement to be attached as in 146c or d, there is an easy explanation, namely that the pronoun *-yki* '2p' is bound in its governing category (by -ø$_2$ in the higher clause).[86]

But why is 145b not acceptable with the complement attached *above* -ø$_2$, as in 146a or b? (From a lexicalist perspective we would expect these to be well-formed; that is, we would expect *shuntanaykita* to be a complement of *yachachi-*.) Their ungrammaticality cannot be explained as a binding violation. Rather, they are bad precisely because the complement is not sufficiently close to the verb (*yacha-*) that selects the complement. (But exactly how?)

[86]Such low attachment seems consonant with Cole's [9] clause union analysis.

10 Some important differences between AnQ and HgQ

10.1 Possessive suffixes after *-q*, *-y* and *-r*

AnQ and HgQ differ in the way a possessive suffix binds following *-q*, *-y* and *-r*. The differences are summarized in Table 4. I suggest that *-q* in HgQ and AnQ, as well as *-y* and *-r* in AnQ, are lexically marked to resist binding by an immediately following possessive suffix. Since *-q*, *-y* and *-r* are subjects accessible to the object, the possessive suffixes are outside of the object's governing category. Thus, the possessive suffixes may bind the Agr-O.

	Huánuco	Ancash
POSS coindexed with Agr-O	$-OBJ_j-q-POSS_j$	$-OBJ_j-q-POSS_j$ $-OBJ_j-y-POSS_j$ $-OBJ_j-r-POSS_j$
POSS coindexed with Agr-S	$-OBJ-y_j-POSS_j$ $*-OBJ-r_j-POSS_j$	

Table 4: How possessive suffixes bind after *-q*, *-y* and *-r*

There are a few apparent counter-examples.

1. It is tempting to analyze *muru-ku-y-nintsik-ta-pis* (plant-ref-inf-12p-obj-even), which Stewart ([32, p.122, ex.13]) glosses 'our crops', as an infinitival relative with a null head, 'what we planted'; however, this would contradict the claim that AnQ *-y* rejects binding by an immediately following possessive suffix. Therefore, I believe it is a possessed, derived nominal—as Stewart's gloss suggests.

2. If *-q*, *-y* or *-r* followed by a possessive suffix occurs after an intransitive verb, then there is no Agr-O for the possessive suffix to bind. Consider the following AnQ example (Miller [22, p.75 ex.143]):

   (147) tambu-ta cha:mu-r-nin ranti-rqu-:.
   store-obj arrive-advss-3p buy-past-1
   'After arriving at the store, I bought (it).'

   Here, *-nin* seems to be fused with *-r* to form *-rnin*, as discussed in section 10.3.3.[87]

[87] Note that *cha:mu-* 'arrive'—despite being an *intransitive* verb—seems to have an object, namely

3. Example 155 below is exceptional in that (i) it is an apparent switch-reference violation and (ii) the possessive suffix binds *-r*. It seems like a genuine counter-example.

10.2 Are *-q*, *-r* and *-y* in F?

In AnQ, *-q*, *-r* and *-y* allow a following possessive suffix. It is therefore tempting to consider that they fill F, with the following possessive suffix occupying Agr-S. However, this is wrong because the possessive suffix is coindexed with the object, which is possible only because it is outside of Agr-O's governing category, which would not be the case if the possessive suffixes were in Agr-S.

Consider *maqa-ma-y-nintsik-ta muna-n* (hit-1obj-inf-12p-obj want-3) 'He wants to hit us'. The explanation for why *-nintsik* '12p' is interpreted as '3' is that coindexing *-nintsik*'s '12' value with *-ma* would violate Principle A. (Since *-nintsik* has the DIP, it is consequently indexed as third person.) This account works if *-y* is in F and *-nintsik* in Agr-S, but it does not seem to work if *-y* is in Agr-S, since then *-nintsik* is outside of *-ma*'s governing category. So to preserve the account of the dual interpretation phenomena, we must show that *-nintsik* is necessarily coindexed with *-ma*.

I believe *-nintsik* must be coindexed with *-ma* because *-nintsik* must get a θ-role. Since *-nintsik* is outside of the clause, it cannot get its θ-role directly; rather it must get it by being coindexed with a position in the clause that gets a θ-role. Since in AnQ *-y* resists binding by a following possessive suffix, *-nintsik* cannot get its θ-role from *-y*. The only alternative, then, is Agr-O, so *-nintsik* must be coindexed with *-ma*.

Therefore, we can continue to assume that clauses headed by *-q*, *-r* and *-y* do not have an F (or equivalently, that *-q*, *-r* and *-y* are portmanteaus of F and Agr-S). Further, when HgQ *-q* and AnQ *-q*, *-y* and *-r* are followed by a possessive suffix, it binds Agr-O. This is a consequence of these anaphors being lexically marked to disallow binding by an immediately following possessive suffix.

10.3 How AnQ *-r* is like HgQ substantivizers

There are various ways in which AnQ adverbializers behave like HgQ substantivizers. For example, in 148 (Pantoja et al. [27, Vol.2, p.376, l.65]) *-pti* 'advds' acts like *-sh(q)a* in forming a relative clause:

(148) qori-ya-pti-n ora 'when they arrived'
unite-plural-adv-3P time

In the following sections I give examples in which AnQ *-r* 'advss' behaves like HgQ *-q* 'sub'.

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tambu-ta 'to the store'. This suggests that *-nin* is an object agreement marker. (Perhaps it signals an increase in the verb's transitivity?)

10.3.1 -r may be a complement

A clause headed by *-r* may be a complement. In 149 (Stewart [32, p.191]), it is the complement to *ka-* 'be':[88]

(149) ... llapan-ta parqo-paku-rnin muru-paku-rnin ka-yka-nki
all-3p-obj irrigate-iter-advss plant-iter-advss be-impf-2
'...be irrigating and planting all of them.'

Other examples from Miller [22] are *parla-r ka-yka:-ya-n* (talk-advss be-impf-plur-3) 'they are talking' and the following:

(150) punku waqa-r ka-yka:-ptin... 'because the door was squeaking...'
door cry-advss be-impf-advds

These are well-formed in AnQ because the "adverbial" clause is the *complement* to *ka-*, from which position *-r* can be coindexed with *ka-*'s subject.[89]

In 152 (Stewart [32, p.231, ex.63,4]) a clause headed by *-r* is a complement of *willa-*:[90]

(152) ... willa-q Dios-nintsik-pa Palabra-n-chaw ama tsay-naw ka-rnin-qa
tell-1⇒2 God-12p-gen word-3p-loc not that-like be-advss-top
'...I tell you "In God's Word it says not to be like that.'

10.3.2 -r may be assigned Case

-r may be followed by case markers (suggesting that it is [+nominal] rather than [−nominal]). Stewart [32, p.153, ex.53-55] gives the following:

---

[88]There are two possible analyses:

a. $[_S[_{VP}[_{SA}$ murupakurnin] ka-] $[_{Agr\text{-}S}$ -nki]]
b. $[_S[_{VP}[_{SA}$ murupakurnin] $[_{VP}$ ka-]] $[_{Agr\text{-}S}$ -nki]]

In a. the adverbial clause is the complement of *ka-* whereas in b. *ka-* is an existential and the adverbial clause is adjoined. I believe a. to be the more reasonable analysis.

[89]In HgQ, the adverbial clause would have to be adjoined to *ka-* or one of its projections. When *ka-* is existential the adverbial clause may be adjacent to *ka-* or outside the clause: *iti yurir kanqa* or *yurir iti kanqa* 'There will be an infant when it is born.' (more literally, 'An infant, being born, there will be'). When *ka-* is predicational, the adverbial clause may not intervene between the complement and *ka-*: *yurir hatun kanqa* 'When born, it will be big' is well-formed, but ?**hatun yurir kanqa* is not.

[90]With reference to the following example [32, p.275, ex.104], Stewart says, "A switch-reference clause may even function as a subject complement":

(151) Loqloq-ya-rnin-qa pa:ra-n-lla.
bubble-become-advss-top stop-3-just
'The bubbling stops.'

However, I believe *loqloqyarninqa* is not the subject, but a complement to phasal verbs as discussed in section 6.4.3. The structure is $[_{VP}[_{SA}$ *loqloq-ya-rnin-qa*] *pa:ra-*].

(153) ... puri-rqa-yki tsoqpa-ku-r-yaq hasta waqa-r-yaq
travel-pst-2 implore-ref-advss-lim until cry-advss-lim
'...you went, imploring, even to the point of crying'

10.3.3 *-r* may be followed by possessive suffixes

-r may be followed by possessive suffixes. These are usually(!) coindexed to the object. For example: *llaki-ma$_i$-r-ni:$_i$-pis* (be.sad-1obj-advss-1p-even) 'should you still be sad for me...' (Stewart [32, p.186, ex.21]); *wanu-tsi-ø$_i$-r-niki$_i$-qa-m* (die-caus-advss-2p-top-dir) 'if I kill you' ([32, p.273, ex.98]) and the following ([32, p.190, ex.56]):

(154) ... yanapa-ø$_i$-r$_k$-niki$_i$-kuna ka-ra-:$_k$ 'I used to help you ...'
help-obj-advss-2p-plur be-pst-1

But in 155 (Stewart [32, p.190, ex.54]), *-r* is bound by the possessive suffix:

(155) ... awkin-ya-r$_i$-niki$_i$ patsa-chaw haqi-shayki
old-become-advss-2p ground-loc leave-1⇒2future
'...when you become old, I will leave you in the ground.'

If *-niki* were not available as a binder, *-r* would have to be c-commanded by the second person object of *haqi-* (to be bound by it). But since *-niki* is an available binder, the adverbial clause can be a sister to the main clause. This is like Pastaza *-shpa* (section 6.3.3): when a possessive binds the adverbializer it becomes a *different subject* adverbial clause.

Is *-rnin* mono- or bimorphemic? We cannot say that in *-rnin* (/-r-nin/), *-n* is always coindexed with the object since *-rnin* may follow an intransitive verb; e.g., *waqa-rnin* 'crying' (Stewart [32, p.131, ex.4,5]). Thus, in some cases we must recognize that *-rnin* is a single suffix. (This is how Hermon [20] treats it.)

Further, in some cases *-rnin* agrees with a person other than third (Stewart [32, p.272, ex.96]):

(156) Reqi-tsi-y-niki-kuna-ta muna-rnin pusha-ya-ra-q
know-caus-inf-2p-plur-obj want-advss guide-pl-pst-1⇒2
'Wanting to familiarize you with it, I guided you(pl) there.'

For such cases we do not wish to claim that *-rnin* is really /r-nin/ (-advss-3p). The solution is to recognize that *-rnin* may be mono-morphemic.

In other cases, *-rnin* is bimorphemic. Evidence for two morphemes is that *-lla* may intervene, as for example in the following (Stewart [32, p.158, ex.96]):

(157) kachay bera:ku-naw puri-ku-r-ni-lla-n-na
wild boar-sim travel-ref-advss-ø-just-3p-now
'if you still go around like a wild boar'

11 Conclusions

I have demonstrated the descriptive and explanatory advantages of treating certain Quechua suffixes as nominals, submitting them to the binding theory. This works hand in hand with an understanding of Quechua structure in which syntactic and morphological rules are intermixed more freely than allowed under virtually any version of the lexicalist hypothesis. This combination provides insightful analyses for a wide range of morphosyntactic phenomena. Here are some of the major claims made here:

- The subject marking anomaly is motivated by the pronominal status of the suffixes involved and Principle B. Suffixes may have the "dual interpretation property" whether or not their forms lend themselves to bi-morphemic analysis.
- HgQ complementizers are really its case-marking suffixes. Whether these are barriers depends on verbal selection.
- Unlike the subject agreement markers, which are pronominal, the possessive suffixes are "mildly" anaphoric.
- *-r* 'advss', *-y* 'inf' and *-q* are anaphors. They may form a unit with a selecting verb, to which further morphological processes can be applied.
- A null possessive suffix *-ø* '12p' accounts for three cases where no subject agreement marker appears.
- Switch reference results from the binding properties of the suffixes involved but, unlike previous analyses, makes no reference to COMP or Ā-binding.
- Huanuco and Ancash Quechua differ as to whether *-r* and *-y* may be bound by a following possessive suffix; this has various morphosyntactic consequences.

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OBLIGATORY DATIVE CLITIC DOUBLING IN SPANISH

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1 Introduction*

Numerous articles and research have been devoted to the topic of clitic doubling in Romance Languages, the phenomenon in which the indirect object Noun Phrase (NP) is doubled by a pronominal clitic.

(1) *Le robaron dinero al hombre.*
3sg stole-3pl money to-the man.
'They stole money from the man.'

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Various linguists, including Kayne (1975), Rivas (1977), Jaeggli (1982), Bickford (1985), and Suñer (1986), among others, have studied the distribution of the pair, specifically with regard to when doubling is obligatory. That is, in many constructions the clitic has the option of co-occurring with the dative NP but is not obligatory. Under certain conditions, however, omission of the clitic will produce ungrammatical sentences. Compare (2) in which doubling is optional with (3) in which it is obligatory.

(2a) *Le dieron juguetes al niño.*
3sg gave-3pl toys to-the child.
'They gave the child toys.'

(2b) *Ø Dieron juguetes al niño.*
Gave-3pl toys to-the child.
'They gave the child toys.'

(3a) *Le faltan cinco dólares a Juan.*
3sg lack-3pl five dollars to John.
'John lacks five dollars.'

(3b) **Ø Faltan cinco dólares a Juan.*
Lack-3pl five dollars to John.
'John lacks five dollars.'

This study investigates the phenomenon of obligatory dative doubling, examining data based upon a critique of two analyses of clitic doubling in Spanish within different grammatical frameworks. Previous analyses propose that dative clitic doubling is obligatory whenever the NP in indirect object position is not a semantic Recipient/Addressee (Goal). J. Albert Bickford's (1985) proposal within Relational Grammar and Osvaldo Jaeggli's (1982) account within Government and Binding are two representative analyses of the phenomenon which argue that conditions for doubling are based upon the thematic role of the superficial indirect object NP. Due to an incomplete corpus of data, however, neither analysis adequately accounts for the phenomenon. The data in this report instead demonstrate that obligatory clitic doubling does not depend solely on the thematic role of the dative but that other features must be considered. I outline data not accounted for by either theory in order 1) to question the validity of relying solely upon analyses based on thematic roles to describe clitic doubling; 2) to present possible (non-syntactic) explanations; and 3) to raise questions beyond the scope of this report for further research.

This paper is organized as follows: section 2 reviews Bickford's analysis proposed within Relational Grammar and outlines structural and theory-based problems with his argument. Section 3 summarizes Jaeggli's analysis regarding dative clitic doubling proposed within Government and Binding as well as potential theory-based problems. At the end of this section I show similarities between Bickford and Jaeggli's arguments.

Section 4 discusses thematic roles and presents data that cannot adequately be accounted for by Bickford or Jaeggli. Explanations for these data are given. Finally, Section 5 presents implications for further research as well as conclusions.

While this is not an exhaustive nor a quantitative study of dative clitic doubling, I believe the data presented in this report raise some questions for further research and support arguments against relying solely on a syntactico-semantic account, particularly a sentence-based analysis, to describe actual language. Dative clitic doubling is not neatly defined by a single theory. Instead, I maintain that other considerations, particularly pragmatic, play an important role in describing the phenomenon, and these remain for further study.

2 Bickford (1982 and 1985)

2.1 Clitic doubling rule

J. Albert Bickford, in his 1985 article entitled "Spanish Clitic Doubling and Levels of Grammatical Relations," specifically addresses the phenomenon within Relational Grammar. Expanding a prior paper on initial and non-initial indirect objects in Spanish (Bickford 1982), he formulates a single Clitic Doubling Rule to account for all instances of dative clitic doubling, as stated in (4).

(4) Clitic Doubling Rule:

> Given a nominal *a*, a clause *b*, and an arc of the form [3(*a*,*b*) $<c_i c_f>$] which meet all necessary conditions for determining a clitic *c* in *b*, *c* may be omitted only if i = 1. (The bracketed expression can be read: "Nominal *a* heads a 3-arc in clause *b*, beginning at the *i*th stratum and ending at the final stratum.")

In other words, a dative clitic is optional if the nominal that determines it is an initial 3 (semantic Recipient or Addressee). (Relational Grammar admits multilevel analysis. The final level corresponds to superficial realization; the initial one is in correspondence with semantic roles (see section 3).) It then follows that if there is a final 3 which is not an initial 3, dative clitic doubling must occur.

Using data from the Chilean dialect of Spanish, Bickford delineates fundamental assumptions on obligatory clitics. He first examines common instances of obligatory clitic doubling in which final dative objects (superficial indirect objects) determine clitics on the verb. Dative clitics obligatorily co-occur with indirect objects when the indirect object is a (free) pronoun or is left-dislocated.[1]

(5) *Le/*Ø da corbatas a él cada Navidad.* (pronoun)
'She gives neckties to him every Christmas.' [2]

(6) *A su esposo siempre le/*Ø da corbatas.* (left-dislocated)
'To her husband, she always gives neckties.' [3]

The non-occurrence of these factors is considered a sufficient condition for omission. That is, when the indirect object (IO) is not a pronominal or occurs to the right of the verb, the clitic is optional.

(7) *(Le) da corbatas a su esposo cada Navidad.*
'She gives neckties to her husband every Christmas.' [4]

Bickford uses a controlled group of data in which the doubled clitic is obligatory even though these sufficient conditions for omission are satisfied. He redefines the term 'obligatory' within the article to mean obligatory even when the above conditions for omission of a clitic are satisfied. Therefore, he examines only nontypical clitic doubling in which indirect objects occur to the right of the verb and are not pronominals.

The condition for optionality in single clauses, he states, is that the Final 3 (superficial direct object) must be a semantic Recipient or Addressee, as shown in (8) and (9), respectively.

(8) *Manuel (le) dio el dinero a su jefe.*
'Manuel gave the money to his boss.' [12]

(9) *Siempre (les) dice palabras duras a sus hijas.*
'He always says harsh words to his daughters.' [13]

2.2 Single clauses

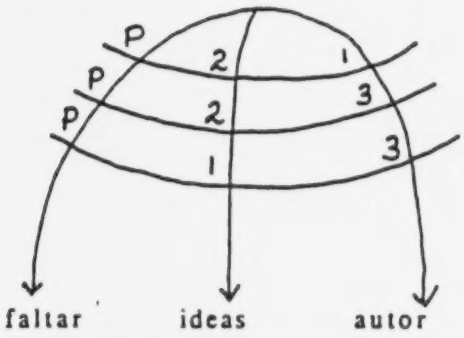
Bickford presents analyses that have appeared in RG literature regarding obligatory dative clitic doubling as bases for postulating his clitic doubling rule, and argues that the rule serves as an additional argument for the analyses taken as a group. In Relational Grammar there is an "uncontroversial assumption" that final 3's which are semantically Recipients or Addressees are assumed to head 3-arcs at all levels (Bickford 1985:194) Following this premise, he demonstrates how each example of obligatory doubling is non-prototypical (contains non-initial 3's) and why the clitic is obligatory. He begins with single clausal types.

Cases of obligatory single clause constructions include Inversion Constructions, as in (10).

(10a) *Muchas veces las ideas creativas le/*Ø faltan a ese autor.*
Many times the ideas creative 3sg lack-3pl to that author.
'That author often lacks creative ideas.'

The stratal diagram for (10a) would be as follows:

(10b)



With Inversion constructions, the final 3 is initially a semantic Agent or Experiencer (initial 1). It is not an initial 3 because only initial semantic Recipients or Addressees may be represented by an initial 3. Thus, *ese autor* in (10) is the initial semantic Agent and later becomes the superficial dative Recipient.

Other Inversion constructions involve so-called psych-verbs, as in (11). Grammatical relations of the dative are indicated in parenthesis.

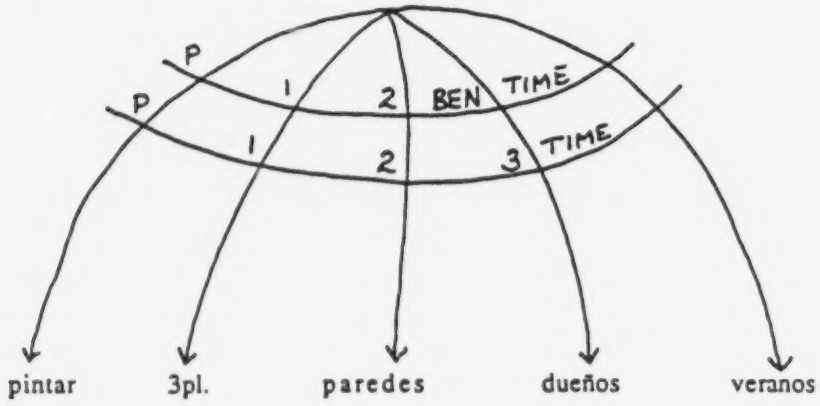
(11) *La comida china le/*Ø gusta a Elena.* (1→3)
'Elena likes Chinese food.'

Also included in obligatory constructions are Benefactive Datives, as shown in (12), where the superficial IO is semantically a Beneficiary.

(12a) *Les/*Ø pintaban las paredes a los dueños todos los veranos.*
'They painted walls for the owners every summer.' [7] (BEN →3)

Diagram (12b) shows that Bickford analyzes these as final 3's which head initial BEN-arcs (BEN represents a Benefactive oblique). Again, the final 3 is not an initial 3 and the clitic is therefore obligatory.

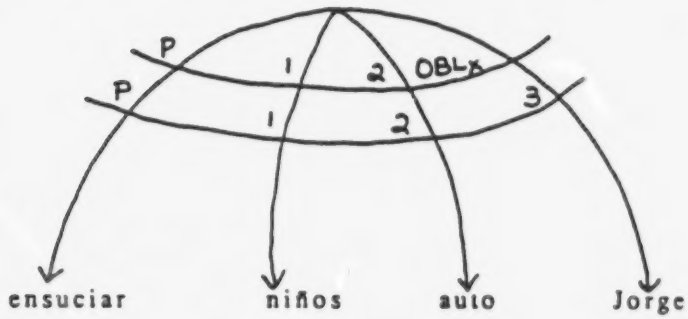
(12b)



Bickford identifies Ethical Datives as "final 3's that are interpreted as having an interest in and being indirectly affected by the action of the verb" (1985:192). An Ethical Dative is shown in sentence (13a) and the corresponding diagram in (13b).

(13a) *Esos niños malos siempre le/*Ø ensucian mi auto a Jorge cuando se lo presto.*
'Those bad boys always get my car dirty on George when I loan it to him.'[9]
(X→3)

(13b)

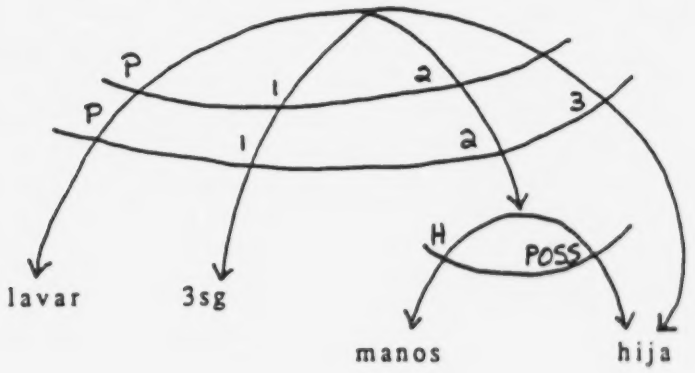


Bickford cites Tuggy's (1980) suggestion that these constructions could be the advancement of some Oblique to 3 or, in the case of Inalienable Possession, an instance of Possessor Raising. The thematic role is ambiguous and therefore labeled here as a variable, X. Regardless of the exact thematic role of Ethical Datives, Bickford considers them to be distinct from Benefactive constructions in which the dative is an initial Benefactive.

Another obligatory single clause construction involves Inalienable Possession, where the final 3 is the possessor of the final 2 (superficial direct object). It is not so important what the final 3 is initially as the fact that it is not an initial 3.

(14a) *Le lavo las manos a mi hija.* (X →3)

(14b)



2.3 Multi-clausal constructions

Obligatory clitic doubling also occurs in two types of multiclausal structures: causative constructions and Modal Union, as in (15) and (16), respectively.[2]

(15) *Siempre le/*Ø hacia romper huevos a la niña.*
'She always made the girl break eggs.' [15]

(16) *Generalmente, cuando los premios les/*Ø son terminados de dar a los ganadores, el público sale rápidamente.*

'Generally, when the prizes have finished being given (lit. are finished of giving) to the winners, the public leaves rapidly.' [16]

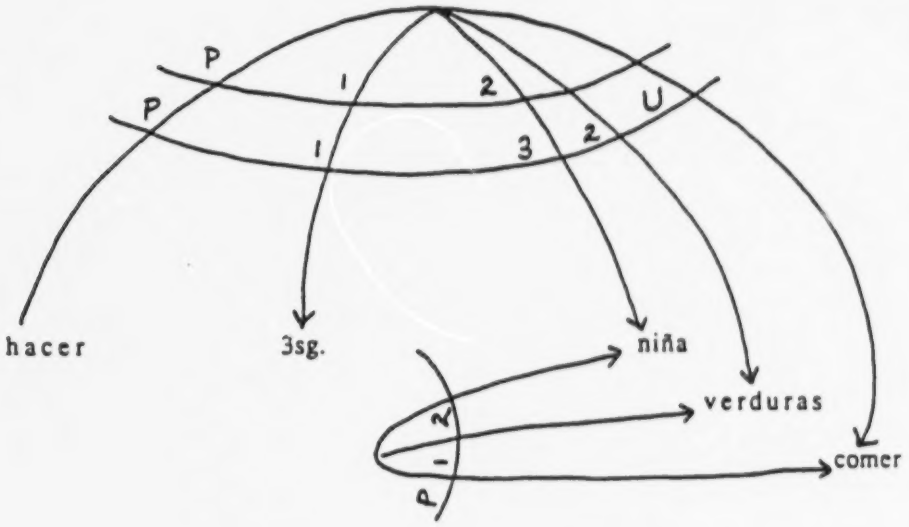
RG assumes that causatives are initially biclausal, but that all dependents of the embedded clause are also final dependents of the main clause (Bickford 1985:197). In both constructions, the two clauses are considered to be united into one final clause; thus, the label 'Clause Union'. A distinction is made between Clause Union (Causative Clause Union) and Clause Reduction (which involves clitic climbing).

In Causative Clause Union the initial 1 of the embedded clause becomes the final 2 or 3 of the matrix clause, depending on the transitivity in the embedded clause. What is of interest to Bickford's analysis is that the final 3 does not head any initial arc in the matrix

clause, as shown in (17). The crucial issue is that the final 3 is not an initial 3, and therefore the clitic is obligatory.

(17a) *Siempre le/*Ø hacía comer verduras a la niña.*
'She always made the girl eat vegetables.' (X →3)

(17b)



In Clause Reduction, union is optional and occurs if the same nominal heads a 1-arc in both clauses, as in control structures involving verbs such as *querer*, *necesitar*, and *desear*, and in raising structures involving verbs such as *poder*, *acabar de*, and *soler*. Control and raising structures are illustrated in (18) and (19), respectively.

(18) *(Les) quiero mandar una invitación a mis suegros.*
'I want to send an invitation to my in-laws.'

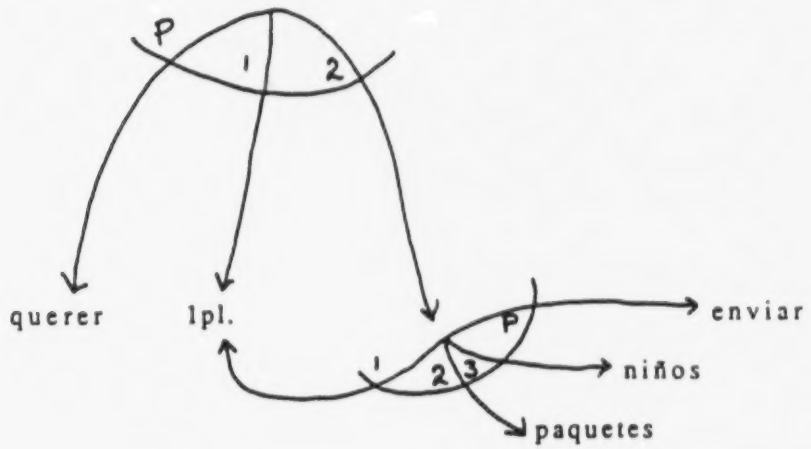
(19) *(Le) puedes mandar una invitación a mi tío.*
'You can send an invitation to my uncle.'

All dependents of the embedded clause become final dependents of the matrix clause. Clitics attach to the highest verb of which they become dependents. Compare (20a) and (21a) and their corresponding diagrams.

(20a)	*Queremos*	*enviar(les)*	*estos*	*paquetes*	*a*	*los*	*niños.*
	Want-1pl	to-send(them)	these	packages	to	the	children.

'We want to send the children these packages.'
(initial and final 3 of embedded clause)

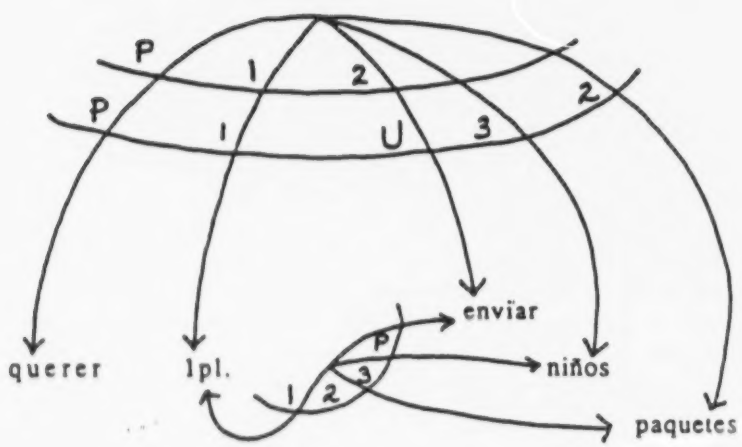
(20b)



(21a) *Les queremos enviar estos paquetes a los niños.*
Them want-1pl to-send these packages to the children.
'We want to send the children these packages.'

(final 3 of matrix clause, but no initial relation to matrix clause)

(21b)



According to the analysis, clitic doubling must be optional in (20), since the dative is the initial and final 3 of the embedded clause. In (21), it must be obligatory, since the superficial indirect object is the initial 3 of the embedded clause and not of the matrix clause. That is, the initial 3 bears no initial relation to the matrix clause but becomes the final 3 of the matrix clause.

Bickford maintains that supportive evidence for his analysis is found when Clause Reduction interacts with other constructions, such as passive in the matrix clause applied to an embedded 2. The combination of both passive in the matrix clause and a multiclausal construction makes the clitic obligatory. Sentences (22a) and (22b) contrast passive and active multiclausal constructions. Even though both are multiclausal sentences, clitic doubling is obligatory only in (22a), demonstrating that passive is necessary.[3]

(22a) *Generalmente, cuando los **premios** les/*Ø son terminados de dar a los ganadores, el público sale rápidamente.*

'Generally, when the prizes have finished being given to the winners, the public leaves rapidly.' [16] (X →3) PASSIVE

(22b) *(Les) quieren dar premios a los ganadores hoy a las seis.*
'They want to give awards to the winners today at six o'clock.' (3 →3) ACTIVE

Sentences (23a) and (23b) are contrasted to illustrate how a multiclausal construction necessitates obligatory doubling. Both sentences are passive; however, clitic doubling is optional in the single clause but is obligatory in the multiclausal construction.

(23a) *Apenas los balones les/*Ø son terminados de entregar a **los jugadores**, ellos empiezan su entrenamiento.*

'As soon as the balls are finished being delivered to the players, they begin their training.' [18a] (X →3) MULTI-CLAUSAL

(23b) *Apenas los balones (les) son entregados a **los jugadores**, ellos empiezan su entrenamiento.*

'As soon as the balls are delivered to the players, they begin their training. [18b]

(X →3) SINGLE CLAUSE

In such cases involving a combination of both a passive and a multiclausal construction, clitic doubling is obligatory. As in Clause Union, the embedded 3 does not head any initial arc in the matrix clause. It does head a 3-arc in the final stratum of the matrix clause, but what is important is that it holds no initial relation to the matrix clause and cannot be analyzed as an initial 3 of the matrix clause.

Bickford points out, however, that his rule does not seem to account for one type of example.

(24) *Los dueños (les) quieren alquilar estas casas a los estudiantes por 3000 pesos.*
'The owners want to rent these houses to the students for 3000 pesos.' [29]

It appears that the clitic is optional even though it attaches to the matrix verb, indicating that Clause Reduction has taken place. Bickford calls this an illusion, because when the clitic is omitted there is no overt evidence that Clause Reduction has taken place. He argues that the clitic is just as likely to have been omitted from the lower clause, since Clause Reduction is optional. Therefore, when the clitic is omitted here, it is omitted from the lower clause. Compare the following:

(25a) *Los dueños quieren alquilar Ø estas casas a los estudiantes por 3000 pesos.*
[30a] NO REDUCTION

(25b) *Los dueños Ø quieren alquilar estas casas a los estudiantes por 3000 pesos.*
[30b] REDUCTION

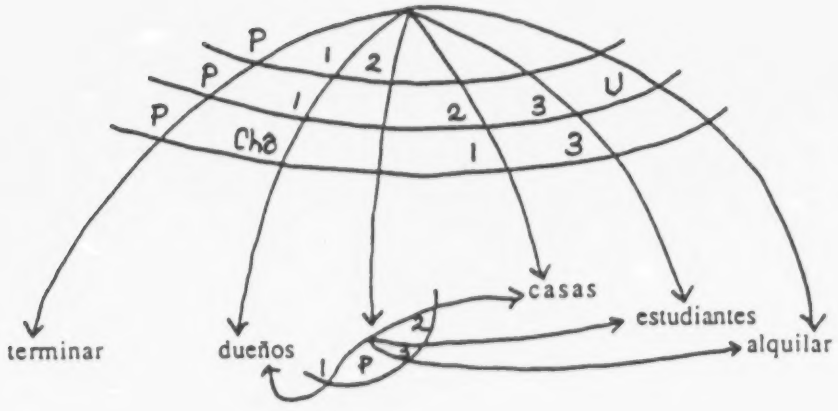
He considers the sentence in (25b) to be correct, in which case the doubling rule holds.

2.4 Theory-based problems

Although Bickford's analysis appears to work with the data given, the analysis has some theory-based problems: for example, he points out that the sentence in (24) is only an apparent counterexample, not an actual one, because the clitic is optional only if reduction has not taken place. Looking at the data from another perspective it could be argued that reduction does indeed occur. Notice the sentence and corresponding diagram in (26), in which the dative clitic is obligatory, since the final 3 is not an initial 3.

(26a) *Las casas les/*Ø son terminados de alquilar a los estudiantes por los dueños.*
'The houses were finished being rented to the students by the owners.'

(26b)



If we remove one stratum, we will arrive at the following:

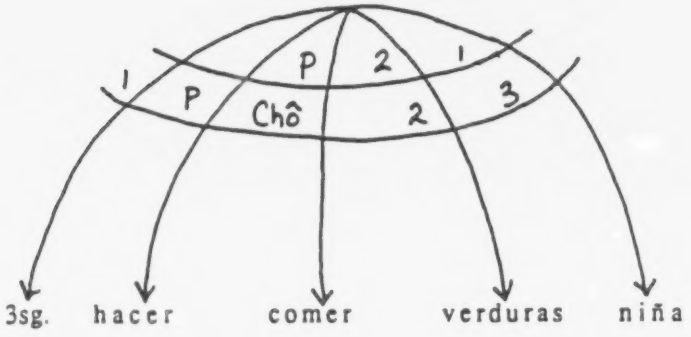
(27) *Los dueños (les) terminaron de alquilar las casas a los estudiantes.*
'The owners finished renting the houses to the students.'

The initial and final relations of the nominal *estudiantes* remain the same; however, the clitic is obligatory in (26) but not in (27). The question remains as to why the clitic is optional in one sentence and obligatory in the other, even though both hold the same relations and are merely different strata of the same relational network. *Estudiantes* holds no initial 3 relation to the matrix and is a final 3 regardless of the construction. To analyze (27) without Clause Reduction would mean that the sentence in (26) could not be derived. The only way we know that Modal Union has taken place is by the collocation of the clitic with the matrix verb. The argument seems circular. If the clitic is completely omitted, then how do we know that reduction took place or from which clause the clitic was omitted?

Furthermore, Bickford's rule is dependent on a biclausal analysis and diagram. If Davies and Rosen's more recent (1988) analysis of Clause Union is applied to the data, Bickford's analysis of multiclausal constructions does not hold. Davies and Rosen analyze Unions as multipredicate uniclausal constructions in which the inner clause occupies the first stratum. In Causative Unions, the recent analysis still captures the fact that the final 3 is not an initial 3.

(28a) *Le hacen comer verduras a la niña.*
'They make the girl eat vegetables.'

(28b)



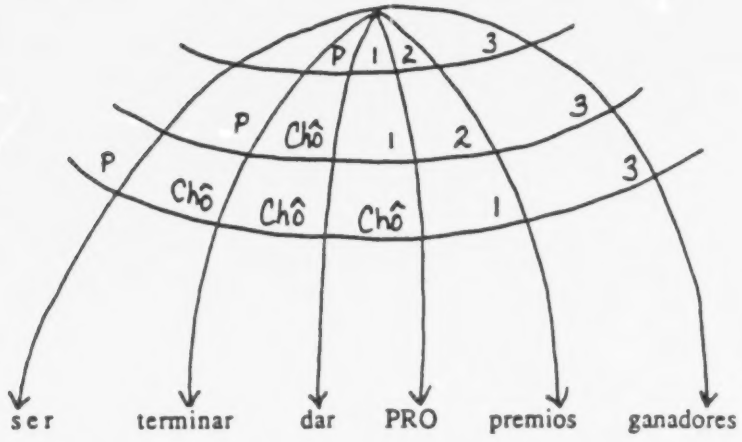
For Modal Union, however, the situation is different. The monoclausal analysis contradicts the Clitic Doubling Rule, since final 3's are also initial 3's of the same clause. The rule states that if all other necessary conditions for determining a clitic are met, the clitic may only be omitted if it is an initial 3 of a clause. Hence the rule would incorrectly predict that the clitic be optional in (29a).

(29a) *Generalmente, cuando los premios les/*Ø son terminados de dar a los ganadores, el público sale rápidamente.*

'Generally, when the prizes are finished being given to the winners, the public leaves rapidly.' [16]

Using passive+multiclausal data, (29a) would be represented by Davies and Rosen as follows:

(29b)



Another problem with Bickford's analysis has to do with conditions for optional doubling in single clauses. He states that in order for the dative clitic to be optional in single clauses, the final 3 must be a semantic Recipient or Addressee. This does not account for the following which may be interpreted in two ways: "They bought the house from Mark" or "They bought the house for Mark." If the house is purchased from Mark, the dative is a semantic Source, and the Doubling Rule would inaccurately predict obligatory clitic doubling.

(30) *(Le) compraron la casa a Marcos.*
'They bought the house from/for Mark.' (Source → 3)

Thus it appears that initial 3's may be too narrowly defined as semantic Recipients/Addressees. One may argue that in the case of (30) the clitic is indeed obligatory, but when the thematic role of *Marcos* is Recipient/Addressee, the clitic is optional. Such an argument seems arbitrary, however, since optionality in this example appears to be possible with both interpretations of the sentence (although speakers do not agree on this point).

The theory-based problems with Bickford's analysis, then, primarily have to do with his interpretation of multi-clausal constructions, particularly involving clause reduction. If certain constructions are reanalyzed as monoclausal constructions, following Davies and Rosen, the Doubling Rule will make incorrect predictions. Furthermore, defining inital 3's as semantic Recipients/Addressees does not account for the possibility of clitic omission in (30). Other problems with basing a doubling rule on the thematic roles of datives will be discussed in further detail in Section 4.

3 Jaeggli (1982)

3.1 Jaeggli

Working within Government and Binding, Jaeggli (1982) proposes a similar analysis of dative clitic doubling. Like Bickford, he notes that clitic doubling is optional in constructions involving non-pronominal datives that carry the thematic role of Goal (hereafter considered to be the same as Recipient/Addressee, based upon a comparison of both Bickford's and Jaeggli's data).[4] Doubling is obligatory with free pronouns and Inalienable Possession constructions, as shown in (31) and (32), respectively (1982:14).[5]

(31a) *Le entregué la carta a él.*
'I delivered the letter to him.'

(31b) * Ø *Entregué la carta a él.* [1.4]

(32a) *Le sacaron la muela del juicio a Juan.*
'They took John's wisdom tooth out.'

(32b) * Ø *Sacaron la muela del juicio a Juan.* [1.55]

Jaeggli accounts for the data by considering Goal constructions to be the unmarked case and other datives to be the marked case for dative clitic doubling. He therefore formulates the following theta-role transmission rule to account for all marked constructions (Jaeggli 1982:36).

(33) $$\begin{bmatrix} \text{CL} \\ \alpha\ \text{Case} \\ \beta\ \Theta_i \end{bmatrix} \cdots \begin{bmatrix} \text{NP} \\ (\alpha\ \text{Case}) \end{bmatrix} \rightarrow 1 \begin{bmatrix} 2 \\ \beta\ \Theta_i \end{bmatrix}$$

Jaeggli accounts for the data by presenting Inalienable Possession as an example of marked cases involving dative clitic doubling. He maintains that dative clitic doubling is obligatory in such constructions. That is, verbs that allow an Inalienable Possession construction are listed in the lexicon as assigning a special theta role, Θ_p, to dative clitics attached to them. This then triggers the Θ-role assignment to the NP via the transmission rule.

The rule supplies Θ-roles to object NP's which are doubled. Therefore, if a clitic is not present, Θ-role absorption will not occur, and the assignment is to the NP instead. That is, if the clitic is not there, the *a* NP object (preceded by a preposition) simply receives the role generally associated with dative NP's, that of Goal (Θ_g).

(34) *Ø Dieron cinco dólares a mi hijo.*
[Θ_g]
'They gave my son five dollars.'

On the other hand, if the construction is inalienable, the verbs which allow this construction do not select a Goal object, and the clitic bears a special Θ-role, Θ_p.

(35) *Le duele la cabeza a Juan.*
[Θ_p] → [Θ_p]
'John's head hurts.'

When the clitic is absent, Jaeggli maintains that Θ-role absorption does not occur, and the construction is not inalienable possession but an "ordinary goal indirect object" (1982:33). Thus, he argues, omission of the clitic in (36b) gives the sentence the nonsensical meaning of "They examined the teeth to the horse."

(36a) *Le examinaron los dientes al caballo.*
[Θ_p] → [Θ_p]
'They examined the horse's teeth.'

(36b) * *Ø Examinaron los dientes al caballo.*
[Θ_g]

The presence of the clitic is required to fix appropriately the thematic presence of the "a-phrase" and imply Θ_p (inalienable possession construction theme role).

Jaeggli describes Benefactive Datives or Ethical Datives as constructions in which both the direct and indirect object positions are filled. Again, he considers these to be marked constructions which therefore require clitic doubling.

(37) *Me le arruinaron la vida a mi hijo.*
'They ruined my son's life on me.' [1.15a]

(38) *Sin mi permiso, te me compraste la moto.*
'Without my permission, you bought yourself the motorbike on me.' [1.15b]

3.2 Theory-based problems

Like Bickford, Jaeggli defines optional dative clitics as being Goal. Again, this does not account for the following optionality in which one interpretation may involve Source.

(39) *(Le) compraron la casa a Marcos.*
'They bought the house from/for Mark.'

Furthermore, although Jaeggli includes some dative causative constructions involving *hacer* in his data, he does not provide an analysis of these or other multiclausal constructions involving Spanish datives.

Jaeggli's treatment of dative clitic doubling is not comprehensive, in that he does not discuss other obligatory constructions such as Inversion (where the dative is the semantic Experiencer). Assuming that the analysis would assign a Θ-role, Θ_e, denoting the role of Experiencer, would there be a difference between Θ-role assignment for (40) versus (41)?

(40) *Le gustan las arvejas a Mafalda.*
'Mafalda likes peas.'

(41) *El buen comer Ø gusta a todos.*
'Good food pleases everyone.'

Jaeggli's analysis assumes that if there is no clitic the NP carries the thematic role of Goal assigned by the preposition, '*a* '. How does this account for the sentence in (41) since the generic group *todos* does not seem to be a clear Goal of *gustar*?

Finally, Borer (1983:35) rejects Jaeggli's analysis, questioning whether the clitic is in an argument position and falls under binding conditions. She states that if the clitic occupies an argument position, all clitic doubling configurations would be problematic because under the Projection Principle, the verb would select two argument positions and assign the same Θ-role to both. She maintains that in Jaeggli's system the clitic crucially does not govern or c-command the governed element. She also argues that no transmission rule is necessary. Instead, "the clitic, as a morphological affix of sorts, simply affects the nature of the Θ-role assigned to the indirect object" (1983:194). She maintains that the interaction between morphology and the argument structure is merely a morphological process.

3.3 Similarities

Bickford and Jaeggli's analyses of obligatory dative clitic doubling have several similarities. Although the formalisms are different, both stem from the semantic roles of the dative; specifically, if the lexical NP is a semantic Goal (Recipient/Addressee), clitic doubling is considered to be optional. In all other cases where the NP is non-pronominal and occurs to the right of the verb, the clitic is required. For Bickford the decision whether or not to double the clitic is based on whether or not the superficial indirect object was initially a Recipient/Addressee; for Jaeggli, thematic assignment to the NP in indirect object position is triggered by the dative clitic if the clitic is not a semantic Goal.

Both analyses include example sentences involving verbs with inherent thematic roles, such as Goal, and can account for verbs which imply a dative Experiencer.

Table 3.30 compares and contrasts the two theories, including an outline of verbs used in each analysis.

Table 3.30 A comparison of two theories

	Bickford	**Jaeggli**
Rule:	Doubling Rule:	Markedness, Θ-Role assignment via transmission rule:
	Given a nominal *a*, a clause *b*, and an arc of the form [3(*a*,*b*) <$c_i c_f$>] which meet all necessary conditions for determining a clitic *c* in *b*, *c* may be omitted only if *i* =1	$\begin{bmatrix} \text{CL} \\ \alpha\ \text{Case} \\ \beta\ \Theta_i \end{bmatrix} \cdots \begin{bmatrix} \text{NP} \\ (\alpha\ \text{Case}) \end{bmatrix} \rightarrow 1 \begin{bmatrix} 2 \\ \beta\ \Theta_i \end{bmatrix}$
Conditions:	Clitic optional if 3→ 3 (Final 3 is an initial 3)	Clitic optional if Goal Θ-Role (clitic absorbs s-government)
	Clitic obligatory if X → 3, where X≠3	Clitic obligatory if Θ_p
Cases:	Recipient/Addressee, Inalienable Possession Ethical Datives Benefactives	Goal Inalienable Possession Ethical Datives
Examples:	**Recipient/Addressee** contar, decir dar, enviar, entregar alquilar	**Goal** convencer, pedir mandar, entregar, regalar
	Experiencer gustar, faltar	—
	Possessor lavar	**Possessor** lavar, examinar, doler, sacar, romper
	Ethical Dative ensuciar	**Ethical Dative** arruinar, comprar
	Benefactive pintar, hacer comida comprar para, tocar para	—

For Possessor, Ethical Dative, and Benefactive constructions, the semantic role is not inherent in the verb. The sentences in (42), for example, both contain the same verb; however, the thematic role of the dative is different in each. The first contains a dative Possessor, whereas the second contains a dative Benefactive.

(42a) *Le lavé las manos a mi hija.*
'I washed my daughter's hands.'

(42b) *Le lavé el carro a Juan.*
'I washed the car for Juan.'

Clearly, in such cases the verbs do not imply just one inherent thematic role, therefore interpretation of the dative cannot be determined solely by the verb. Table 3.31 provides examples from Bickford and Jaeggli's data containing such verbs in order to demonstrate the context necessary for their interpretation.

Table 3.31 Sample verbs in Possessor, Ethical Dative, and Benefactive constructions

Possessor

Bickford:
*Antes de cenar, siempre le/ *Ø lava las manos a su hija.*
'Before dinner, she always washes her daughter's hands.' [10]

Jaeggli:
Le lavaron las manos a Luis.
'They washed Luis' hands.' [1.54e]

Le duele la cabeza a Mafalda.
'Mafalda has a headache.' [1.3a]

Le rompí la pata a la mesa
'I broke the table's leg.' [1.3b]

Ethical Dative

Bickford:
*Esos niños malos siempre le/*Ø ensucian mi auto a Jorge cuando se lo presto.*
'Those bad boys always get my car dirty on George when I loan it to him.' [9]

Jaeggli:
Me le arruinaron la vida a mi hijo.
'They ruined my son's life on me.' [1.15a]

Sin mi permiso, te me compraste la moto.
'Without my permission, you bought yourself the motorbike on me.' [1.15b]

Benefactive

Bickford:
*Les/ *Ø pintaban las paredes a los dueños todos los veranos.*
'They painted walls for the owners every summer.' [7]

*Mi esposa les/ *Ø hace comida a muchas familias pobres.*
'My wife prepares food for many poor families.' [8]

Bickford and Jaeggli's analyses are similar in that they account for optional versus obligatory possibilities (without mention of the scope of preference for the clitic).[6]

Moreover, the rules are semantically motivated and rely on a limited set of verbs and verbal categories.

4 Problematic data

4.1 Thematic roles

Since neither analysis explicitly defines thematic roles such as Goal, Recipient, Experiencer, etc., I will attempt to briefly outline prototypical definitions of semantic roles related to datives in Spanish and list verbs related to each category before discussing the data in Section 4.2.[7]

A Recipient may be considered to be that entity which acquires possession of the patient as a result of the specified action; that is, the entity may assume control over the Theme (the entity towards which an action is directed; not a Patient). An Addressee is that entity to which a communication is directed. A Goal would include both of the above definitions for Recipient and Addressee.

Jackendoff (1972:66) notes that with verbs of motion, the Goal is the destination of the motion. He states that this is different from Location, since with verbs of motion, Location should not be generated in a construction with the verb itself in the prelexical base. He also delineates the Source-Goal pattern as a change in position of the direct object, extending from one NP to another NP. For this paper, I use his definition in which Goal may imply the transfer of an entity toward the dative; that is, the Goal dative somehow (whether literally or metaphorically) receives the entity. Source is therefore interpreted as that entity from which a communication or possession is directed. Based on Jackendoff (1972:78), this paper will consider Source to be the complement of Goal.

The Experiencer is the thinking being which experiences the thought or perception specified by certain verbs. In Spanish, the Experiencer commonly occurs in subject position; however, in Inversion constructions it occurs in what is typically the indirect object position. The agent and dative exchange roles in such constructions, thus the label 'Inversion'.

Benefactives may be interpreted as the entity for whose benefit an action is done; that is, it is the entity that is directly affected by the action but does not necessarily become the possessor of the Theme/Patient (Patient= an entity that undergoes a change of state or location or is otherwise affected directly as a result of the action specified by the verb.) In Spanish Ethical Datives are often quite similar to Benefactives, although they may imply some sort of a negative benefit.

The Possessor is that entity to which the Theme/Patient belongs. Jackendoff (1972:56) notes that in English we may have a possessor goal. In Spanish this is

complicated by Inalienable Constructions in which the accusative object is inherently a part or possession of the dative complement.

Before moving to problematic data, the following is a partial list of Spanish verbs and the thematic roles they may impart to datives, primarily based on Bickford and Jaeggli's analyses. Those in parentheses may be ambiguous or occur in more than one category, depending on the context of the verb, and will be discussed in the following section.

Verbs that assume a dative that is Goal, Source, or Experiencer have inherent thematic roles; that is, the interpretation of the dative argument is predictable from the meaning of the verb. Such verbs include the following:

Table 4.10 Verbs with inherent dative thematic roles

Goal:

communication verbs: explicar, contar, decir, confesar, hablar, maldecir, mentir, negar, traducir, convencer, (pedir, prometer, permitir, averiguar, recomendar)

e.g., *Siempre (le) contaban historias a su madre.*
'They always told their mother stories.'

ditransitives: dar, mandar, enviar, entregar, dejar, prestar, regalar, devolver, contribuir, pagar, deber, dedicar, ofrecer, servir, traer, tirar, agregar, examinar, corregir, defender, demostrar, mostrar, (escribir, comprar, alquilar, exigir, pertenecer, referir, presentar)

e.g., *El ladrón (le) devolvió el dinero a la señora.*
'The thief returned the money to the woman.'

Source:

quitar, sacar, robar, suspender, pedir, recoger, salir bien/mal, exigir, comprar, alquilar)

e.g., *Le robaron dinero a Juan.*
'They stole money from John.'

Experiencer:

inversion constructions: gustar, complacer, agradar, satisfacer, faltar, quedar, merecer, pasar, caer bien, alegrar.

e.g., *Dinero les falta a los estudiantes aquí.*
'The students here lack money.'
(Literally: 'Money is lacking to the students here.')

For other verbs, the thematic role of the dative cannot be determined solely by the verb, as in table 4.11.

Table 4.11 Verbs with non-inherent dative thematic roles

Benefactive:

pintar, tocar, abrir, destruir, construir, matar, hacer, cerrar, vender, comprar, arreglar, componer, romper, cubrir, mover, poner, guardar un puesto, morder, detener, vencer, despertar, acostar, levantar, resolver, escribir, ensuciar, arruinar, acabar.)

e.g., *Le arreglaron el carro a Jorge.*
'They fixed the car for George.'

Possessor:

(lavar, curar, jalar, coger, examinar, doler, romper, sacar, vestir, peinar.)

e.g., *Le curó las heridas al enfermo.*
'He healed the patient's wounds.'

Locative (?):

(poner, llegar, dirigirse, encomendarse, acercarse.)

e.g., *Le llegaron las cartas a Juan.*
'The letters arrived to John.'

4.2 Problematic data

Although Bickford and Jaeggli's analyses seem to account for the majority of constructions involving dative arguments, some problems remain for consideration. First, for many speakers there are examples where clitic doubling may be omitted even though the Doubling Rule would predict obligatory doubling. Such examples are especially evident in cases involving the Inversion construction with quantifiers (with the thematic role of Experiencer) but may also occur with dative arguments assuming thematic arguments such as Source, Benefactives, and Possessor. Moreover, the thematic role of the indirect object is not always simple to determine and depends upon the context of the verb. In many instances, the Doubling Rule would predict that the clitic is obligatory, sometimes erroneously.

For dative arguments that assume the thematic role of Recipient/ Addressee, it may be that there are cases where clitic doubling is strongly preferred or perhaps semi-obligatory. The Clitic Doubling Rule does not account for such instances, since it predicts only two outcomes: obligatory or optional. This binary prediction fails to account for the scope of preference and context of usage. In certain instances omission of the clitic may actually be preferable even in cases where the analyses in question would simply predict optionality. This is particularly true when a specific meaning is intended. That is, if a shift in emphasis is intended, implying a focus on a particular action or a series of actions rather

than on the dative complement, or if a non-partitive/generic reading is intended, omission of the clitic may be preferable.

I will outline problematic examples that do not appear to conform to Bickford or Jaeggli's analyses. Rather than proposing an alternative analysis, I will provide a descriptive discussion of data pertaining to the analyses in question.

4.3 Experiencers

Interviews with native Spanish speakers yielded some interesting results with regard to clitic doubling which demonstrate the inadequacy of relying solely on syntactic rules to account for the phenomenon.[8] I will first discuss instances where clitic doubling should be obligatory, according to Bickford and Jaeggli, but the data reveal otherwise.

Recall that obligatory doubling must occur when the dative object is not an initial 3, i.e., Recipient/Addressee (Bickford), or if the thematic role of the dative NP is not assigned the Θ-role, Θ_g, where g=Goal (Jaeggli). Thus, the clitic should be obligatory in constructions involving datives that are semantic Experiencers, since these datives are not initial 3's. Jaeggli similarly maintains that such datives are the marked case, and therefore his transmission rule would assign a Θ-role other than Θ_g. For our purposes, we will consider any non-goal thematic role to be of the class whose role is Θ_x. Specifically, datives assuming the semantic role of Experiencer will have the role Θ_e, specified in the lexicon, as in (43).

(43) *La música francesa no le gusta a Juan.*
'John does not like French music.' (1 →3; Θe)

Although (43) conforms to the analyses in question, Bickford and Jaeggli do not account for the grammaticality with omission of the clitic in (44), which has the same verb as (43). According to both analyses, the following sentence should be ungrammatical.

(44) *La música norteamericana no Ø gusta a nadie.*
'No one likes North American music.' (1 →3; Θe)

The data revealed almost unanimous acceptance of clitic omission, in Inversion constructions (where the dative argument is the semantic Experiencer) that contain psych-verbs (Belletti and Rizzi 1988) and a dative argument comprised of a quantifier expression or a generic expression. These are represented in (45) and (46), respectively.

(45a) *El humo de tabaco no Ø agrada a nadie.* (1 →3; Θe)
'Tobacco smoke doesn't please-3sg anyone.'

(45b) *El buen comer Ø complace a todo el mundo.*
'Good food satisfies everyone.'

(45c) *La música norteamericana no Ø gusta a nadie.*
'No one likes North American music.

(45d) *La comida china Ø satisface a cualquiera.*
'Chinese food satisfies anyone.'

(46) *La música latina no Ø gusta a los norteamericanos.*
'North Americans don't like Latin music.'

The dative clitic may be omitted even when word order is altered and the generic subject occurs after the verb, as in (47).

(47) *No Ø agrada a nadie el humo de tabaco.*
'Tobacco smoke doesn't please anyone.'

The dative argument can have either a specific or nonspecific reference in Inversion constructions involving psych-verbs and a generic superficial subject. Compare (45) and (46) which have a nonspecific reference with the following sentences in which the dative is specific. Speakers noted a shift in emphasis when the clitic was omitted, although they had difficulty defining it.

(48) *La comida italiana Ø complace a María.*
'Italian food satisfies Mary.'

(49) *El humo del tabaco no Ø agrada a Elena.*
'Tobacco smoke doesn't please Elaine.'

(50) *La comida china Ø satisface a Marta.*
'Chinese food satisfies Martha.'

In constructions such as those above, clitic omission made the sentence awkward only with the verb *gustar* and a specific dative, as in (51).

(51) ?*La música francesa no Ø gusta a Juan.*
'John doesn't like French music.'

It is interesting to note that for many speakers, clitic omission changes the emphasis slightly from the partitive interpretation of individuals within a group in (52a) to the nonpartitive interpretation of the group as a generic class in (52b).

(52a) *El buen comer no le complace a nadie.*
'Good food doesn't satisfy anyone (individual).'

(52b) *El buen comer no Ø complace a nadie.*
'Good food doesn't satisfy anyone (in general).'

Thus, in constructions involving Inversion, psych-verbs and generic subjects, clitic omission may actually be preferable if the speaker's intention is that the dative be non-referential/non-specific. To avoid any partitive construction or individualization of a dative group, the clitic is omitted. Compare the following:

(53a) *El buen comer Ø complace a todos.*
Good food satisfies everyone (collectively)'

(53b) *El buen comer le complace a todos.*
'Good food satisfies everyone (individually)'

It is interesting that doubling with a plural clitic was considered awkward in (54a) unless the dative were changed.

(54a) ?*El buen comer les complace a todos.*
'Good food satisfies everyone.'

(54b) *El buen comer les complace a todos ellos.*
'Good food satisfies all of them.'

(54c) *El buen comer le complace a todos.*
'Good food satisfies everyone.'

For certain constructions and certain speakers, inclusion of the clitic actually made the sentence awkward, as in (55).

(55a) *La comida italiana Ø agrada a los jóvenes.*

(55b) ?*La comida italiana les agrada a los jóvenes.*

Note that Inversion verbs that do not denote psychological states, such as *faltar* and *quedar*, behave differently from psych-verbs. Instead, obligatory doubling is required, as in (56).

(56a)	*Dinero*	*le*	*falta*	*a*	*todo*	*el*	*mundo.*
	Money	3sg	lack	to	all	the	world.

'Everyone lacks money.'

(56b) **Dinero Ø falta a todo el mundo.*

Nevertheless, neither Bickford's nor Jaeggli's analysis predicts or accounts for clitic omission involving psych-verbs, nor does either analysis account for dative Experiencers that occur to the right of the verb.

4.4 Possessors

Constructions categorized as Inalienable Possession also yield interesting results, in that with certain sentences and for many speakers, the absence of a dative clitic is acceptable. The Bickford and Jaeggli analyses predict otherwise. For omission to occur, the sentence must appear as one of a series of actions, as shown in the following:

(57a) *?Curó las heridas al enfermo.*
'He healed the patient's wounds.'

(57b) *Entró en la casa y Ø curó las heridas al enfermo.*
'He entered the house and healed the patient's wounds.' (Possessor →3; Θp)

(58a) *?Quitó la ropa al enfermo.*
'She removed the patient's clothes.'

(58b) *El médico entró en el cuarto y Ø quitó la ropa al enfermo porque el pobrecito no lo pudo hacer si mismo.*

'The doctor entered the room and removed the patient's clothes because the poor thing couldn't do it himself.' (Possessor →3; Θp)

Bickford and Jaeggli's analyses also do not account for certain constructions involving verbs that may take a dative carrying the semantic role of either Possessor/Source. Both theories would predict obligatory doubling for (59), a single action from which clitic omission is acceptable.

(59) *Yo ya no Ø saco muelas a nadie.*
'I don't take out molars from anyone anymore.'

In cases such as these, humanness does not appear to increase the need for clitic doubling.

(60a) *?* Mi hermano Ø jaló (cogió) la cola al gato.*
'My brother pulled the cat's tail.'

(60b) Mi hermano le jaló (cogió) la cola al gato.

(60c) *?* Mi hermano Ø jaló (cogió) el pelo a mi hermana.*
'My brother pulled my sister's hair.'

(60d) *Mi hermano le jaló (cogió) el pelo a mi hermana.* (Poss./Source →3; Θ_p)

(61a) *? El veterinario Ø examinó los dientes al caballo.*
'The veterinarian examined the horse's teeth.'

(61b) *El veterinario le examinó los dientes al caballo.*

(61c) ? *El dentista Ø examinó los dientes a María.*
'The dentist examined Mary's teeth.'

(61d) *El dentista le examinó los dientes a María.* (Possessor →3; Θ_p)

Nevertheless, if the dative is animate, the preference for clitic doubling seems to increase, at least for verbs that imply a dative Possessor/Source. Compare the sentences in (62).

(62a) *El niño quitó los botones a las blusas.*
'The child removed the blouses' buttons.'

(62b) **La enfermera quitó la ropa a los enfermos.*
'The nurse removed the patients' clothes.'

4.5 Benefactives

Verbs involving datives that are semantic Benefactives (but not necessarily Recipients/Addressees) do not present a clear pattern. Doubling must occur with these, following Bickford. Jaeggli does not specifically discuss such datives, but based on his Θ-role transmission rule, doubling would also be required. Note, however, the following counterexamples in which omission of the dative is acceptable.

(63a) *Jorge, ábrele la puerta a Elena.* (Benefactive → 3)
'George, open the door for Elaine.'

(63b) *Jorge, abre Ø la puerta a Elena.*

(64a) *Le preparé comida a mi hija para la fiesta.*
'I prepared food for my daughter for the party.'

(64b) *Ø Preparé comida a mi hija para la fiesta.*

For other Benefactive constructions, the pattern is not as clear. Some constructions involving verbs that occur with Benefactive datives are generally acceptable with or without the clitic while others, in similar constructions, tend to be rejected. Compare (63-64) with (65-66) (where ? indicates probably grammatical and ?* indicates probably ungrammatical).

(65a) ?*Un carpintero le construyó la casa a Pablo.* (Benefactive →3)
'A carpenter constructed the house for Paul.'

(65b) ?**Un carpintero Ø construyó la casa a Pablo.*

(66a) *Le mataron los perros a Pablo.*
'They killed the dogs for Pablo.'

(66b) ? *Ø Mataron los perros a Pablo.*

As with Inalienable Possession, for some speakers, omission of the clitic in (66b) is more acceptable if the action is one of a series, as in (67).

(67) ?*Entraron en la casa y luego Ø mataron los perros a Pablo.*
'They entered the house and later killed the dogs for Pablo.'

4.6 Other thematic roles

Some verbs may allow more than one semantic value for the dative argument. Often the semantic function is ambiguous, as in (68), in which the indirect object may be interpreted either as the Source or Benefactive. That is, for many speakers (68a) may be interpreted two ways: "Martha, buy the house from George" or "Martha, buy the house for George." In either case the clitic appears to be optional for most speakers. Again, both Bickford and Jaeggli would maintain that obligatory doubling occurs with such constructions since the dative cannot be interpreted only as a Goal.

(68a) *Marta, cómprale la casa a Jorge.* (X → 3)
'Martha, buy the house from/for George.'

(68b) *Marta, compra Ø la casa a Jorge.*

(69a) *Marta, no le compres la bicicleta a Jorge.*
'Martha, don't buy the bike from/for George.'

(69b) *Marta, no Ø compres la bicicleta a Jorge.*

Neither Bickford nor Jaeggli's analysis explains how their rules apply to cases such as (70). Native speakers accept these utterances even though the datives are not clear semantic Goals; the role of these datives is rather semantic Possessor or possibly Experiencer. In either case, however, if the dative is not Goal, the clitic doubling rule would therefore inaccurately predict obligatory doubling.

(70a) *Esta carta le pertenece a Teresa.* (X →3)
'This letter belongs to Theresa.'

(70b) *Esta carta Ø pertenece a Teresa.*

(70c) *Las riquezas naturales Ø pertenecen a todo el mundo.*
'Natural resources belong to everyone.'

Furthermore, for sentences involving Clause Union, Bickford maintains that the clitic is obligatory since the dative argument of the embedded clause is not an initial 3. This does not explain the acceptance by many speakers of the following constructions, both with and without clitic doubling. The superficial dative is the initial 1 of the embedded clause.

(71a) *No le permiten fumar a su hijo.* (1 →3)
'They don't allow their daughter to smoke.'

(71b) *No Ø permiten fumar a su hijo.*

(72a) *Le hice estudiar español a Juan.*
'I made John study Spanish.'

(72b) *Ø Hice estudiar español a Juan.*

Also, how would the analyses in question deal with the following, where the NP in indirect object position has a thematic role that is not a clear Goal? Spanish speakers tend to prefer (73a). Nevertheless most also accept (73b) without reservation, despite clitic omission.

(73a) *Siempre les exigen mucho dinero a los jefes.*
'They always demand a lot of money from the bosses.'

(73b) *Siempre Ø exigen mucho dinero a los jefes.*

Since both analyses in question are syntactico-semantic, neither analysis in question takes into account the difference in emphasis (scope of focus) brought about by clitic omission and the possibility that omission or inclusion of the clitic may be a matter of preference. This is true even with Goal datives, as in (74) and (75).

(74a) *El general le puso una medalla al soldado y después dio un discurso.*
'The general put a medal on the soldier and then gave a lecture.
(preferred if emphasis is upon the dative)

(74b) *l general Ø puso una medalla al soldado y después dio un discurso.*
(preferred if emphasis on the action is desired by speaker)

(75a) *El humo del tabaco no le agrada a María, pero a Pedro sí.*
'Tobacco smoke doesn't please Mary, but it does Peter.'
(preferred if emphasis is upon the dative)

(75b) *El humo del tabaco no Ø agrada a María.*
'Tobacco smoke doesn't please Mary.'
(preferred if emphasis on the action is desired by speaker)

Compare the following in which the salient feature in (76a) is completion of the action, whereas (76b) focuses more on the people being invited.

(76a) *Ø Enviamos invitaciones a todos.*
'We sent invitations to everyone.

(76b) *Le enviamos invitaciones a todos.*
'We sent invitations to everyone.'

We have seen various data problematic to Bickford and Jaeggli's analyses. Sentences containing a wide range of non-Goal datives present counterexamples/problems not accounted for. These include constructions involving Experiencers, Possessors, and Benefactives, among other thematic roles. Furthermore, the issue of speaker preference regarding clitic doubling is not considered in either analysis.

5 Implications and consequences

In the case of each construction mentioned, the representative Relational Grammar and Government and Binding analyses do not entirely account for the data. The object of this report is not to negate the importance of these syntactic and dialect-specific accounts, but rather to reiterate that a single analysis or rule is not adequate to account for all instances of obligatory/optional dative clitic doubling in Spanish. To rely on such an analysis may be to overgeneralize what is occurring in the language. The formal syntactic analyses in question (based on thematic roles) may account for the majority of the data; however, pragmatic variables must also be taken into account. To clarify problematic issues, a larger corpus of data than that of either analysis is needed.

My findings imply that it is also important to look beyond the sentence level to discourse grammar and to examine the role of clitic doubling within larger texts in order to find more examples of clitic omission and to understand the role of context, since in many cases the clitic serves to clarify or reinforce the role of the dative nominal. It may be that a discursive analysis of texts would reveal more examples that do not conform to Bickford's or Jaeggli's analyses and would reveal possible reasons. Unfortunately, such is beyond the scope of this report.

The type of verb and verbal constraints must be considered since some verbs allow more than one semantic role for the dative argument; for example, the verbs *comprar* and *alquilar*. Furthermore, there may be a spectrum of preference regarding doubling; that is, usage may not be merely a case of optionality versus obligatory clitic doubling. A larger quantitative analysis of Goal dative constructions may reveal this more clearly.

It appears possible that some dialects always require doubling or strongly prefer clitic doubling. Thus, to generalize a clitic doubling rule for all dialects is oversimplifying

the phenomenon. In contrast to Bickford's and Jaeggli's analyses, which are based primarily upon data from one dialect, the data in this study were taken from a variety of dialects. This provided evidence contrary to Bickford's and Jaeggli's claims that their generalizations hold for Spanish in general. In addition to dialect differences, clitic doubling may also depend upon register, the level of education of the speaker, and other idiolectal features, although investigating such factors is beyond the scope of this paper.

In light of the many questions that remain regarding dative clitic doubling, it is clear that a larger corpus of data and more exhaustive treatment remain for further study. I do not attempt to explain the phenomena thoroughly, only to critique two syntactic explanations by providing some counterexamples and possible influencing factors as well as questions for further study. Syntactic rules and explanations have yielded a wealth of interesting research, but dative clitic doubling in Spanish continues to be an elusive phenomenon, particularly in spoken Spanish across dialects. In the end, it remains difficult to account for all instances of clitic doubling in the spoken language adequately (and perhaps other phenomena across languages) without taking into account pragmatic features.

NOTES

1 Here, free refers to a non-clitic pronoun. A clitic may be defined as being phonologically bound but syntactically free (Bickford 1989). See Zwicky (1977) for a detailed definition. Final 3 nominals are underlined.

2 Clitic climbing means that the final 3 of the embedded clause determines a dative clitic on the matrix verb and cannot determine a clitic on the verb of which it is a semantic dependent.

3 Bickford notes that the part of the sentence which is not underlined shows habitual aspect. Including habitual information rules out other possible reasons for obligatory doubling, since some speakers require the clitic with non-habitual aspect.

4 Common thematic relations include agent, goal, source, theme, and experiencer. Jaeggli does not define these, but refers to Gruber (1965) and Jackendoff (1972).

5 Since a pronominal is always [+animate], Jaeggli notes that pronominal complements must be obligatorily clitic doubled in all cases and in all dialects. Furthermore, he says that pronouns are allowed in object position only when the cliticized version is not allowed. Thus two animate complements only occur together if both are third person (Perlmutter 1971): e.g., *Me le recomendaron.

6 Jaeggli (1982: 14) does note that River Plate Spanish prefers the dative clitic even with Goal.

7 Many of these definitions are taken from class lectures from Bickford (1989).

8 To determine whether or not the clitic doubling rule and Jaeggli's similar analyses indeed accounted for the aforementioned thematic arguments, I conducted an informal survey among native speakers of Spanish and later constructed a formal questionnaire involving 100 constructions both with and without clitic doubling. All of the constructions contained non-pronominal dative arguments to the right of the verb in order to maintain Bickford's conditions for optionality. This second questionnaire was used to conduct interviews with eight more native speakers from six different areas of the Spanish-speaking world (Spain, Ecuador, Panama, Puerto Rico, Nicaragua, and Mexico.) Three of the participants were completely bilingual in English and Spanish; four had some proficiency in English although they preferred to speak Spanish; and one knew no English at all. All of the participants return regularly to their home country and all but one (who went home four years ago) had returned within the past year. One participant was visiting relatives for a month but has never lived in the United States.

In each interview, the participant was asked to listen to each construction andimmediately tell whether the sentence sounded good to him/her. If the sentence seemed unacceptable, the participant was asked whether s/he would hear such a sentence in their home area or not, and if so in what context. If the sentence was considered completely unacceptable, they were asked what sounded "bad" or how they would say it in normal speech. The terms "ungrammatical" and "correct" were avoided in order to obtain data that reflect the language as it is indeed spoken, rather than Spanish as it ought to be. The participants were encouraged to react to the constructions from their own intuition rather than according to the way they were taught in school.

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